

[All Rights Reserved.]

HANDBOOK

OF THE

MEDICAL SERVICES

OF

FOREIGN ARMIES.

PART II.—GERMANY.



LONDON:

MAJESTY'S STATIONERY OFFICE,
AND SONS, ST MARTIN'S LANE,
ORDINARY TO HIS MAJESTY.

directly or through any Bookseller, from
SONS, LTD., FETTER LANE, E.C., or
TWEEDDALE COURT, EDINBURGH; or
116, GRAFTON STREET, DUBLIN.

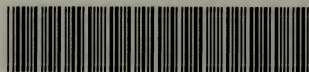
1908.

Price Sixpence.

N:
WB100
1908-
M17H

M
24813

M 24813



22502683405

[*All Rights Reserved.*]

HANDBOOK
OF THE
MEDICAL SERVICES
OF
FOREIGN ARMIES.

PART II.—GERMANY.



LONDON:

PRINTED FOR HIS MAJESTY'S STATIONERY OFFICE,
BY HARRISON AND SONS, ST. MARTIN'S LANE,
PRINTERS IN ORDINARY TO HIS MAJESTY.

And to be purchased, either directly or through any Bookseller, from
WYMAN AND SONS, LTD., FETTER LANE, E.C., or
OLIVER AND BOYD, TWEEDDALE COURT, EDINBURGH; or
E. PONSONBY, 116, GRAFTON STREET, DUBLIN.

1908.

Price Sixpence.

(Wt. 19219 2000 11 | 08—H & S 3068) $\frac{P. 07}{358}$

M24813

WELLCOME INSTITUTE LIBRARY	
Coll.	we!M Omec
Call	M:
No.	WB100
	1908—
	M17h

INTRODUCTION.

In 1902 a "Handbook of the Medical Organisations (chiefly for War) of Foreign Armies," by Lieut.-Colonel Frank Howard, Army Medical Staff (Retired Pay), was published officially. It contained a short account of the field medical units and some other details of the army medical service of twenty different States, and has been used as one of the text books for the examination of officers of the Royal Army Medical Corps qualifying for promotion to Lieutenant-Colonel.

In consequence of the Geneva Convention of 6th July, 1906, a knowledge of these services has become of greater importance than previously to officers of the army, more especially to officers of the Royal Army Medical Corps, and to all who may be associated with that corps in time of war. It has been found advisable therefore to alter the character of the handbook considerably in order to present a wider and more general view of the military medical services of other countries.

The plan has been adopted of preparing accounts of the more important of these services and publishing them in separate parts as each is completed. This will not only facilitate revision as changes occur in the future, but will place the parts in the hands of officers with less delay than if the plan were followed of issuing a complete revision of Colonel Howard's handbook in one volume.

The several parts are being compiled by Lieut.-Colonel W. G. Macpherson, C.M.G., R.A.M.C.

General Staff,

September, 1907.

(3068)

A.2

HANDBOOK
OF THE
MEDICAL SERVICES
OF
FOREIGN ARMIES.

PART II.

THE MEDICAL SERVICE OF THE
GERMAN ARMY.

CHAPTER I.

HISTORY.

The development of the German Army Medical Service is more closely connected with the history of Prussia than with that of other German States, and it is out of the Prussian military medical system that the present medical service of the Imperial German Army has been evolved. At the same time the kingdoms of Bavaria, Hanover, Saxony and Württemberg had their own individual systems, part of which, especially in the case of Bavaria, is still retained.

The outstanding feature in the development of the

Germany Army Medical Service is the steady and persistent progress made from the earliest times onwards. The lessons of each war were studied at the time, and the succeeding years of peace were utilized in introducing the reforms which the experience of the war indicated. Such reforms were introduced deliberately, and once introduced they remained until subsequent events proved their insufficiency and led to further progress. There was no going back on old systems to suit the interest that might happen to be most powerful at the time, as was apparently the case in the history of the French Medical Service. In fact the history of the German Army Medical Service is characterised by direction of the highest intelligence, by persistent pursuit of the object in view, and by continuous endeavour towards greater efficiency. For this it is indebted to the liberal views of a long series of able directors and other officers of the medical service, whose frank criticism and practical suggestions attracted the notice and gained the sympathy of the highest military authorities, as well as of the enlightened monarchs who ruled the destinies of Prussia and the German Empire. The names of Holtzendorff, Goercke, Fritze, Cothenius, Grimm, Wiebel, Lohmeyer, Loeffler, Lauer, Coler, Leuthold and Schjerning in Prussia, Hofmann, Pitschel, Günther and Roth in Saxony, and Stromeyer in Hanover represent nearly two centuries of steady progress, which, in 1907, reached its culmination in the issue of field medical regulations based on the experiences of the most recent wars. Other names famous in the medical profession, such as those of Bardeleben, Esmarch, and Langenbeck, are met in connection with this work of construction, although the bearers of them had no part in the administrative control of the Army Medical Service.

Until the thirteenth century the practice of surgery was in the hands of the monks, and when this was prohibited by Papal decree it fell into the hands of barbers and barber-surgeons, who for centuries afterwards under the name of *Feldscherer* (or field barbers)—a name that still survives in the “felsher” of the Russian Army Medical Service—were almost the only representatives of the Medical Service with fighting units. A few better educated men, called *Wundärzte* or “wound doctors,” occupied the higher medical posts in the army, but there was no organized official medical service until the reigns of Maximilian I and Charles V in the sixteenth century. Regulations were then issued under which each regimental commander had to provide a *Feldscherer* for each company, together with the necessary drugs and instruments; while a *Wundarzt* was appointed to each of the higher commands or headquarters’ staff. A principal medical officer, called the *Obristfeldarzt*, was appointed to the headquarters of armies, had supervision over the *Wundärzte* and *Feldscherer* and their medical and surgical equipment, and was consulted in connection with treatment of cases and surgical operations. The sick and wounded were treated in camp, in tents pitched near the baggage lines, by the *Feldscherer*, and nursed and fed by women. When an army moved, the serious cases were handed over to the nearest local authority; others were carried with the army in provision wagons, &c. A hospital master (*Spittelmeister*) was appointed, who had authority to deduct a *groschen** from the pay of each man and hand it over to the local *burgomeister* in order to provide for the care of the sick and wounded in the locality where they were left.

* About one penny.

In the reign of Georg Wilhelm (1619—1640) a mercenary army was maintained in Mark Brandenburg, and the company *Feldscherer* was then paid, appointed or dismissed at will by the captain of the company; while the regimental commander had similar power over the appointment of a regimental *Feldscherer*.*

Amongst the duties of these *Feldscherer* was that of shaving the men of the company and of the regimental staff.

In the following reign, that of the Great Kurfürst Friedrich Wilhelm (1640—1688), the Brandenburg forces were engaged in a long series of campaigns against the French in Holland and on the Rhine from 1667 to the peace of St. Germain in 1676. The army was reorganized early in the reign, a national army was formed in place of mercenary troops, although some of the latter remained, and considerable additions were made to the medical service, mainly with a view to preventing disease and ensuring proper care of sick and wounded. To each large town a garrison doctor (*Garnisonsmedicus*) was appointed, whose duties were the treatment of cases of sickness amongst officers and advising in regard to measures for dealing with epidemics. The garrison doctor had, however, no connection with the regimental *Feldscherer*, who treated the sick of regiments in quarters.

For the medical service of the field army a field physician (*Feldmedicus*), a staff *Feldscherer*, and an apothecary in charge of a field dispensary were attached to the general staff; and a field physician and a field surgeon (*Feldchirurgus*) were appointed to supervise the work of the regimental and company *Feldscherer*.

The company *Feldscherer* were then obliged to sub-

* The staff of cavalry regiments had a *Wundarzt* instead of a *Feldscherer*.

mit daily reports of sick to the regimental *Feldscherer*, while he in his turn had to send in daily sick states to the field physician and field surgeon. All *Feldscherer* had also to prepare reports once a week on their cases and their treatment, together with special notes on cases that died. These reports went to the field physician. Reforms were also made with a view to preventing waste in hospitals and ensuring provision of a proper quality of medicines, &c.

Friedrich I, who succeeded the great Kurfürst and reigned as first King of Prussia (1688—1713), introduced reforms which had the effect of improving the status and efficiency of the regimental and company *Feldscherer*; the former were made responsible for maintaining a proper supply of medicines, &c., in the regimental medical chests, and were given complete control over the company *Feldscherer*, who were previously appointed and dismissed at will by their company commanders. It had always been the custom to deduct a *groschen*, called the "medicine *groschen*" from the pay of the soldier for medicines supplied to him, and the company *Feldscherer* received this, providing himself with the necessary drugs for the treatment of cases. When the regimental *Feldscherer* became responsible for the supply of drugs the "medicine *groschen*" went to him.

It was when army medical organization was in this condition that a Polish nobleman and doctor of medicine, Abraham A. Gehema, who had served as a soldier and captain of cavalry, began to write certain pamphlets, urging improvements in the care of the sick and wounded. He was the first great reformer in army medical matters, and his book, "*Der kranke Soldat*," exposed the worthlessness and ignorance of the *Feldscherer* of the day, and urged a scheme for educating him in anatomy and other necessary surgical

knowledge. Gehema's enthusiasm led to important advances in connection with medical and surgical education which had a far-reaching effect on the Army Medical Service in the following reign, that of Friedrich Wilhelm I.

In 1716—1718 three specially selected *Feldscherer* were sent to study in Paris, and the King's body surgeon, the regimental *Feldscherer* of the Guards, Holtzendorff, was appointed to a newly formed post, that of Director-General of the Army Medical Service, with the title of *Generalchirurgus*. Several *Feldscherer* were also sent to the Russian and Austrian armies in Hungary to learn field surgery in the war against Turkey.

In 1724 the *Collegium Medico-chirurgicum* was founded in Berlin, and in 1726 the famous civil hospital, the Charité, was opened there in a building originally constructed as a plague hospital in 1710 and used subsequently for various purposes, including that of a garrison hospital. Eight company *Feldscherer* of the Guards were appointed to go through a complete course of study in the Collegium. They were called "pensioners," and founded what was known for a hundred years afterwards as the "Pensioners' Institute" of the Prussian Army Medical Service. It was then decreed that no one could be appointed a regimental *Feldscherer* who did not pass an examination held by the college.

The instruction of these *Feldscherer* also included attendance on a course at the Anatomical Theatre, founded in 1713, and in the Berlin Botanical Gardens, which Holtzendorff added to the course in 1724.

Up till then the regimental commander selected and appointed his regimental *Feldscherer* at will. In opening the Charité as a civil hospital, special provision was made for its being utilized for the instruction

of military surgeons, more particularly of the "pensioners," one of whom had to be always resident in the hospital. In addition six other *Feldscherer* were appointed as Charité surgeons, and they in time became the "pensioners" if they were favourably reported upon.* The pensioners were under the supervision of the Director-General and had sole claim to the appointment of regimental surgeon up till the end of the century.

The company *Feldscherer* alone remained as a more or less uneducated barber-surgeon, but responsible work was taken out of his hands and placed in the hands of the regimental *Feldscherer*.

Many improvements were also made in connection with garrison hospitals and in the care of troops. A medical officer, the King's body physician Eller, was appointed to supervise the medical work of the hospitals with the title of *Generalstabs-Feldmedicus*, and was associated with Holtzendorff in the direction of the medical services. During the outbreak of plague in 1709 hospitals had been established throughout the country and after the disappearance of the epidemic many of them were taken over by the military authorities, thus forming the first garrison hospitals in Germany. In 1726 definite regulations were issued authorising the establishment of such garrison hospitals in every garrison town.

Regulations affecting the care of sick and wounded in the field were included in the Infantry Regulations of 1729. When troops were on the march, sick were to be left in the village houses and then transferred to a hospital opened in the nearest town. A captain,

* It was in this way that the chief civil hospital, where the Berlin University clinics are held, had its origin in the requirements of an army medical service, and the close connection with that service which existed at the time of its foundation is still retained.

a *Feldscherer* and two sick attendants (*Krankenknechte*) accompanied the sick thither from each battalion. They returned to their unit when the army advanced, but a trustworthy non-commissioned officer, with sufficient money to defray expenses, was left behind in charge. The field dispensary was also kept at the town hospital until the troops advanced. During an action the company *Feldscherer* remained behind the fighting line, and wounded were ordered to find their way back to him. After the action the wounded were brought in to the village in which billets for their unit were arranged.

During the campaign in the Upper Rhine in 1734 Friedrich Wilhelm I issued special instructions for the formation of a field hospital of 600 beds. These instructions are the first definite regulations for the mobilization of a field hospital, and contain details for the administration and nursing staff, equipment, bedding, utensils, diets, &c., of the hospital. The administration was to be in the hands of two captains, one as hospital inspector, the other as hospital commissary. The accommodation was for 600 patients, 400 to be in 200 double beds and the remaining 200 in single beds, each bed being fully provided with mattresses, blankets, pillows, &c. Both Eller and Holtzendorff were to be consulted in connection with the equipment. Each patient had a deduction made from his pay in order to meet the expense of providing him with $\frac{1}{2}$ lb. meat and a jug of beer daily. Bread was sent from each regiment for its own sick or wounded. A subordinate personnel of 4 non-commissioned officers, 24 sick attendants, and 12 women was appointed for laundry, kitchen and cleaning duties.

In the reign of Frederick the Great (1740-1786) much of the good intentions of the system of an army medical service which had thus been developed broke

down, owing, it is stated, to the tyranny and avarice of regimental and company commanders and regimental *Feldscherer*. "Nowhere was the sick soldier so badly looked after as in Prussia," was said of this period.* But the accounts of the Medical Service show that considerable progress was made in organisation, more especially in connection with field medical services during the Silesian campaigns and the Seven Years' War.

The mortality from disease, however, was excessive,† and this fact led the *Feldmedicus* Fritze to submit a report full of strong criticism and suggestions for reform, to which Frederick the Great's attention was attracted. He summoned Fritze to Potsdam, and entrusted him with the duty of supervising all the hospitals in time of war. This was shortly before Frederick the Great died; but, in the following reign, that of Friedrich Wilhelm II, Fritze's proposals were taken up and embodied in Field Medical Regulations that were published in 1787, a set of regulations which, with several subsequent modifications, remained in force until 1834. The period, that followed the death of Frederick the Great, and the influence of Fritze's criticism were of great consequence in the history of the Prussian Army Medical Service. The Rhine campaign, against the French Republic in 1792-1795, left Prussia a comparatively long state of peace, during which, with the accession of Friedrich

* Frederick the Great, however, took much interest in the care of the soldier, and obtained in 1744 barber surgeons and ten *aides-chirurgiens* from Paris to act as operating surgeons and instructors. They did not fulfil expectations, and were expensive; so much so that in 1772 Frederick the Great exclaimed, "Ich will keine Franzosen mehr; sie seynd gar zu liderlich und machen lauter liderliche Sachen."

† Myrdacz quotes the figures as being 65 per 1,000 of the 1st Army and 100 per 1,000 of the 2nd Army in the War of the Bavarian Succession (7 years' war).

Wilhelm III to the throne in 1797, important changes were made and new elements introduced into the system of education, status, and appointment of army medical officers. Then came the war with Napoleon, with the disastrous battles of Saalfeld, Jena, Auerstädt, and Eylau, and the French occupation of Berlin. In the peace that followed, the University of Berlin was founded, and the changes which then took place introduced changes also in the educational system of the army medical officers. Finally, the campaign against Russia in 1812, for which Prussia was forced to provide a contingent in aid of Napoleon's Grand Army, and the War of Liberation in 1813-1814, led to the introduction of a system of national military service into Prussia in the "*Landwehrordnung*" of 3rd September, 1814. The Hundred Days' War, culminating in the battle of Waterloo, ended this eventful period.

During the whole of this period the influence of Fritze's proposals relative to field medical organization was felt, but it is the name of Goerke which is pre-eminent in the military medical history of the time. His was the moving spirit; he was to the Prussian Army Medical Service what Larrey and Percy were to the French, what MacGrigor was to the British service; and no name is more honoured, no memory more cherished amongst German army medical officers than his. He was born in 1750 and died in 1822. His earlier medical education was obtained in the homes of regimental surgeons, and he was eventually appointed a company surgeon in 1767. Subsequently he continued his education by travel and study in Berlin, his journeys in 1787 to 1789 taking him to the great medical schools of Austria, Italy, Switzerland, France, London, Edinburgh, and the Netherlands. In England he studied under John and William Hunter, Baylie, Cooper and Blizard,

and in Edinburgh under Bell and Hamilton. He was appointed a *Generalchirurgus* on his return, and became *Generalstabschirurgus* of the army on the death of Theden in 1797. He was Principal Medical Officer in the Rhine campaign, and accompanied Friedrich Wilhelm III during the campaigns of 1806-1807 and 1813-1814. Just two months before his death in June, 1822, he applied for permission to retire from the service, submitting in doing so a long and characteristic document of thirty-four closely written pages.

Goercke's work falls under two categories, first the development of the army medical educational institutions, and, secondly, the organization of the field medical service.

Under Fritze's influence, after the death of Frederick the Great in 1786, considerable reforms were introduced in Infantry Regulations published in 1788, with a view to improving the position of army surgeons and the general health and comfort of the soldier. The company *Feldscherer* was relieved of the duty of shaving the company in peace, and he became no longer subject to punishment by subaltern officers, but only by the officers commanding regiments; the regimental *Feldscherer* was entrusted with the duty of supervising all matters connected with the health of the troops; registers of all men, reporting sick, were to be kept; and annual reports had to be submitted to the *Generalchirurgus*. Goercke's first reforms were introduced after the Rhine campaign, which disclosed a great deficiency in trained army medical personnel. He made this the subject of a memorable report, pointing out that the army required 2,156 surgeons in the event of war, and that there was no institution where such a number could be trained.

This led to the foundation, on 2nd August, 1795, of the famous "Pepinière" in Berlin, which developed

afterwards into the "Friedrich-Wilhelms Institut," and is at the present day the "Kaiser Wilhelms Akademie." Three classes of students were permitted to enter the Pepinière, namely, young students of 17 to 19 years of age and of Prussian birth, voluntary students from foreign countries, and company surgeons, who were attached for study. The first class numbered 80 to 90 in the early years and was maintained free of cost; the second was limited to 18 in number and its members paid their own expenses; the third class was attached on command. The subjects of study were literary as well as professional. Libraries, museums, &c., were established in connection with the Pepinière, and, under Goercke's influence and the sympathetic encouragement received from Friedrich Wilhelm III during the time in which he held aloof from the Napoleonic disturbances in Europe, the development of army medical education was uninterrupted. The war of 1806-1807, the occupation of Berlin by the French, and the foundation of the Berlin University in 1809, with the suppression of the *Collegium Medico-chirurgicum*, threatened to choke its growth; and, but for the exertions and influence of Goercke, the education and position of army medical officers would have then received a serious set back. Goercke, however, obtained sanction for the expansion of the Pepinière in 1811 by the formation of a new institution, the Military Medical Academy (*Medicinisches-Chirurgisches Akademie für das Militär*), to which ordinary and extraordinary professors were appointed, and to which the Charité hospital was assigned as its clinical hospital under all circumstances.*

Other reforms, introduced by Goercke about this time, were the granting of the grade of officer to the

* See footnote, p. 11.

military surgeons and an increase in their pay in recognition of their work during the war of 1806-1807. In the year 1809 a War Office was established in Berlin in place of the Higher Military College, and medical matters were dealt with in one of the three divisions of the new War Department by the *Generalstabschirurgus*, with whom three divisional *Generalchirurgi* were associated. He was given a staff consisting of a senior staff surgeon, a hospital quartermaster and a field apothecary. But as regards purely scientific matters, such as the supervision of education and medical examinations, the military medical service was under the Medical Department of the Home Office, of which the *Generalstabschirurgus* was a member. The *Generalstabschirurgus* was made responsible to the King and to the War Office for general military medical administration. Principal medical officers were appointed to divisions, and became responsible to the generals commanding for supervision of the work of the regimental, battalion and company surgeons, all of whom were placed under their authority.

A series of peace medical regulations was issued for the first time in 1810 in the form of a "*Lazarethverpflegungsinstruction*," or regulations for the dieting of hospitals. They entrusted the provision of hospital diets and supplies to the commissariat officials and placed the administration of military hospitals in the hands of a board composed of a captain and a regimental or battalion surgeon. Previously the arrangements for the dieting and care of sick soldiers were left to the regimental and company commanders. Men unfit for full military service (*Halbinvalide*) were employed at this time as sick attendants.

With regard to the development of the field medical organization between the dates of the death of Frederick the Great and the close of the Napoleonic wars, there

were, first of all, Fritze's proposals, embodied in the Field Medical Regulations of 1787. According to these regulations a chief directorate of field hospitals was appointed on the outbreak of war. The Director was a staff officer and the members of the directorate associated with him were the *Generalstabsfeld-medicus*, the senior *Generalchirurgus*, and a Counsellor of the Field Commissariat. Hospitals were divided into mobile and fixed hospitals, the latter being organized for the reception of 10 per cent of the troops. They were established in the larger towns, as near the army as possible, but were spread over different localities instead of being massed together in one town. One-third of the hospital equipment for 10,000 sick and dressing material for 30,000 wounded were to be kept in mobilization stores in peace. Each regiment had a covered ambulance wagon, with 2 attendants, and with capacity for carrying 8 patients. The provision wagons were assigned for carriage of slight cases of sickness and wounds.

The mobile hospital or ambulance consisted of a unit that marched with the Field Bakery, Field Treasury and Supply Park behind the army, and had a personnel, under the *Generalchirurgus*, of 7 physicians, 86 surgeons, 4 apothecaries, 50 sick attendants and 25 administrative and subordinate personnel. Its transport material consisted of 9 wagons, namely, 2 dispensary wagons, 2 equipment wagons, and kitchen, provision, bedding, baggage, and forage wagons.

The campaign of 1792-1795 found this organization not only unwieldy but not yet ready, and much suffering ensued in consequence. Goercke then took the matter of field organization into his own hands. He was at the time a member of the Directorate of Hospitals in the Field, but took upon himself to

completely reorganize the arrangements without reference to his colleagues. He established a new and much more mobile field hospital, and opened fixed hospitals in various towns. The regulations of 1787, however, remained in force, and when the war of 1806-1807 broke out the same difficulties were experienced, and the same individual effort had to be made as in 1792-1795. In fact there was no field hospital on the spot at the battle of Jena, nor was there any personnel to take over some 18,000 wounded after the battle of Eylau, until Goercke himself arrived on the scene three days afterwards and put matters right.

The failure of a chief directorate of Field Hospitals to avert a medical breakdown in these two campaigns led to its abolition, and the whole of the field medical direction was handed over to the *Generalstabschirurgus*, Goercke, as chief of the army medical service. He was loyally supported by the Chief Commissariat officer, and organized in 1809 a flying hospital for 200 patients for each of the 6 brigades, then in existence, and a main hospital of 1,200 beds for each of the 3 divisions. The senior medical officer was appointed director of each hospital. The personnel of a flying hospital was 15 surgeons, 2 apothecaries, 1 quartermaster, 12 sick attendants, cooks, washerwomen and others. Its transport material consisted of 9 transport wagons. The main hospital was organized with a personnel of 75 surgeons, 5 apothecaries, 5 quartermasters, 80 sick attendants, cooks and washerwomen, and 24 others. They had 12 wagons for transport purposes. With the Prussian contingent of 20,000 men, who formed part of Napoleon's Grand Army in 1812, there were 3 of the flying and $1\frac{1}{2}$ of the main field hospitals, but as the senior medical officers, to whom the charge of these hospitals was given, did not give satisfaction as commanding officers, 1 combatant officer was appointed to

each of the former and 3 to each of the latter class of hospital for military and administrative command, without, however, interfering with the position of the senior medical officers as directors of the hospital.

During the War of Liberation, Goercke, with the assistance of the Commissary General Ribbentrop, organized a number of fixed hospitals on the lines of communication and home territory, and placed them under the direction of the Intendant-General Graf v. Lottum, who, at the same time, started the formation of voluntary aid societies throughout the country. In the autumn of 1813 fourteen of these hospitals, with about 10,200 beds, were established in Silesia, and definite lines of evacuation to them from the field army were laid down. Afterwards a main reserve hospital for 3,000 beds was equipped in Berlin.

Eventually a central administrative medical board was formed for the direction of the hospitals in the conquered territories. Bavaria, Württemberg and certain minor States refused to take part in this central administration, and protested against inspection of their hospitals by its members. Their hospitals suffered much in consequence and very unfavourable results, as regards the mortality, occurred in them. Notwithstanding all these excellent preparations the number of the medical units was far too small and their mobility unsatisfactory. This was especially felt at the battle of Leipzig, where only 9 flying field hospitals, with 3 ambulance wagons and no main field hospital, had been able to come up. These facts and the failure of the regimental surgeons to co-operate in the work of the dressing station were the cause of the many harrowing scenes that have been described by various writers. After these experiences the authorities proceeded to form, in 1814, twelve transport companies, each consisting

of 120 men, with 15 stretchers, 30 litters, 50 pairs of crutches, and 50 surgical haversacs. The transport companies had also to make use of such country carts as they could obtain by requisition. Although the completion of this scheme of transport companies was not carried out, it is worth noting, because it indicates how early, from an historical point of view, the Prussian Medical Service recognized the importance of having definitely organized units for the evacuation of sick and wounded, and how the need of them is forced upon the attention of military authorities by the sufferings of the wounded in campaigns where no such organizations exist. It was Prince August of Prussia who first suggested their formation after the battle of Leipzig. Goercke's hospital arrangements on the lines of communication and throughout the territories in rear of the armies advancing on Paris worked admirably, and, according to Myrdacz, only 15.1 per cent. of the 6,286 patients in the hospitals at the end of July, 1813, and of the 127,679 subsequently admitted up to the end of March, 1814, died. In the hospitals of Bavaria and Württemberg, which refused to come under the central administrative control, the mortality was 50 per cent.

The Hundred Days War found the Prussian Medical Service insufficiently organised for mobilisation purposes, with the result that there were no medical units present at the battle of Waterloo, and only the regimental surgeons were there to carry on the work of first aid. But subsequently between June and August some 60 Prussian military hospitals were established all over the country between Memel and Evreux, and worked so admirably that the mortality amongst the patients, namely, 948 in 42,092 admissions, was exceptionally small. The absence of infectious disease was also remarkable, and is attributed

to the fact that the sick and wounded were widely distributed instead of being massed together in one or two places.

After the 1815 campaign 7 main, 4 reserve, and 24 flying field hospitals were organized. Of the last class each of the 6 army corps had 3, the corps of Guards 2, and 4 were held in reserve.

But, between the War of Liberation and the Hundred Days War, an important change took place in the Prussian military system. Compulsory military service was introduced and the standing army increased to 270,000 men, for which Goercke had to provide an increase of some 2,000 in the number of surgeons. His scheme for obtaining this was to grant exemption from service with the colours to all young men who were intended for the profession of medicine or pharmacy on the condition that they would serve, when required, as surgeons and apothecaries in the army. He also secured a number of military and civil surgeons to undertake voluntarily the further education of these students in the different towns.

This was the beginning of a long series of reforms in the administration and organization of the Army Medical Service, concurrent with changes in the general military system of Germany. There was a prolonged period of peace, interrupted only by the Danish and Bohemian campaigns of 1848 and 1849; it lasted till 1864, when the wars with Denmark, Austria and France followed one another in quick succession. During the earlier part of the period Goercke continued to be the head of the medical department till his death in 1822. He was succeeded by Wiebel (1822-1847), Lohmeyer (1847-1851), Grimm (1851-1879), Lauer (1879-1889), Coler (1889-1901), Leuthold (1901-1906), and Schjerning, the present Director-General. It is noteworthy that all these eminent military

surgeons held their appointments for life, but after Goercke the names most associated with army medical development in Prussia are those of Grimm, Coler, and Schjerning, together with that of Loeffler, who was Grimm's most able and active assistant.

Among the more important changes in peace organization which occurred previous to the wars of 1864, 1866, and 1870 was the abolition of the company surgeons, *i.e.*, the old company *Chirurgi* and company *Feldscherer*, and the formation of an army hospital corps of surgeons, surgeons' assistants and military sick attendants in their place. This was a gradual development; it did not come all at once. At first the company surgeons were reduced in numbers, and in order to replace them a soldier from the ranks of each company or squadron was selected, who was trained by the senior medical officers for two or three years. A few of the most efficient of them were sent afterwards to surgical schools and then became eligible for appointments as company surgeons. But the majority remained in the army as surgeons' assistants under the title of *Chirurgengehilfe*. This was the state of affairs from 1832 to 1848. The surgical schools and company surgeons were then completely abolished, and the value of having only subordinate personnel for medical duties with companies was recognized.

In 1852, on the recommendation of a committee of reorganization, definite regulations for the organization, uniform, pay, rank and instruction of this body of men followed. Their name was changed from surgeons' assistants to hospital assistants (*Lazarethgehilfe*), and they were entrusted with the duty of attending troops at swimming exercises, musketry, &c., in place of the surgeons. They were also given field companions and other medical and surgical material to carry, a duty which

previously fell to the company surgeon. When fully instructed they received the pay and rank of non-commissioned officers.

In the same year the class of men known as military sick attendants (*Krankenwärter*) was also organized, 20 being allotted for training to each army corps annually. This number was subsequently increased to 25.

During the first half of the nineteenth century important changes also took place in the rank, titles and pay of the medical officers, in the system of education, in the old Pensioner Institute, the Pepinière and Military Medical Academy, and in the method of supplying medical and surgical material to the army.

One Director-General, with one Deputy instead of four, formed the administrative staff in Grimm's time, and Grimm himself and his successors obtained the relative rank of Lieutenant-General. In 1849 the distinction between surgeon and physician (*Chirurg* and *Arzt*) was abolished and all medical officers were called *Arzt*, the old class of *Wundärzte* becoming *Assistenzärzte*, and the surgeons on probation *Unterärzte*. The division of the army into military army corps districts in 1820 led to the appointment of principal medical officers of army corps under the title of *Korpsgeneralärzte* in 1828.

The Pepinière was amalgamated with the Military Medical Academy in 1824 under the name of Friedrich Wilhelms Institut, a name which the Pepinière held as a separate institution from 1818 onwards. The Pensioner Institute that had been formed in 1725 in connection with the Charité Hospital was abolished as such in 1825, and the "pensioners" given the appointments of staff surgeons in the Friedrich Wilhelms Institut, the name of pensioner being completely abolished in 1848.

Up till 1826 medical and surgical supplies were purchased by officers out of the *Medicingeld* or *Medicinalgroschen*, but in that year a definite military pharmacopoeia and military dispensaries were established. Two years later the dispensaries became part of the military hospitals. The charge of the dispensaries and making up of prescriptions were partly in the hands of one-year volunteer pharmacists, partly in those of the medical officers, and this employment of one-year volunteer pharmacists led to a curious state of affairs in the medical history of the Prussian army. Originally the pharmacists were obliged to do military service as such without pay, but as many preferred to serve as ordinary soldiers there was a great lack of pharmacists, and certain privileges had then to be given in order to induce them to serve as pharmacists. This led to many of the young men in Prussia becoming students of pharmacy and doing their military service as one-year pharmacist volunteers. There was thus such an overwhelming number of pharmacists available that in 1855 the privileges had to be withdrawn or reduced.

In 1826 new hospital regulations were issued. They were revised later on in 1853, under the heading of "Peace Regulations for Military Hospitals," making military hospitals garrison instead of regimental institutions, and establishing the scale of hospital accommodation at $6\frac{1}{2}$ per cent. of strength. In fortresses the accommodation was practically double, namely $12\frac{1}{2}$ per cent.; originally in 1809 it was as much as 20 per cent.

Although Prussia enjoyed profound peace from the time of the close of the Napoleonic wars till the wars of 1864, 1866, and 1870, with the exception of the short campaigns in Schleswig Holstein and Baden in 1848-1849, important developments took place in its

military system during that period. The lessons of the Crimean War, the Italian and Austrian wars, and the war of rebellion in the United States of America were closely studied, and changes were introduced in consequence of them in the field organization. During the earlier years, after the demobilization of field hospitals and establishments and the issue of new regulations for future mobilization, the value of the autonomy of the Army Medical Service in the field, that had to be put into practice by Goercke in the War of Liberation by sheer force of circumstances, was lost sight of, and the mixed control, partly of the medical and partly of the intendance departments, was continued. The only change that was made then was an attempt at making the light field hospitals more mobile by adding two 2-horsed ambulance wagons to each for conveyance of the personnel or wounded as required. Eventually, in 1834, regulations were issued for the field medical arrangements in war, the main point of which was the establishment of a field hospital staff for each army corps, consisting of a surgeon-major, a captain, and a senior field quartermaster, who had under their control 3 light field hospitals for 200 to 300 patients, and 3 heavy field hospitals for 400 to 600 patients, each with an administration staff of 1 surgeon, 1 combatant officer, and 1 quartermaster. The light field hospitals were attached to divisions and consisted of a transport section and a "depôt," the former being intended to follow the troops into battle, while the latter was more of the nature of a main dressing station or ambulance, which would be opened in the vicinity of the battlefield for the reception and treatment of wounded until they could be relieved by the heavy field hospitals. They were very similar, indeed, to our modern field ambulances in regard to their functions, just as the heavy field hospitals

resembled our clearing hospitals, although at that time the light field hospitals had no organized or other establishment of stretcher bearers, and depended mainly on requisitioned country carts for transport of wounded. Shortly afterwards, in 1844, the 3 heavy field hospitals of the army corps were amalgamated into 1 main hospital of 1,200 to 1,800 beds, divisible into 3 sections, with an establishment of 9 surgeons, 60 assistant surgeons, 52 sick attendants and a few apothecaries and office personnel. The establishment of light hospitals was 4 surgeons, 9 assistant surgeons, and 16 sick attendants. When the 3 heavy field hospitals were amalgamated into 1 main hospital for each army corps the field hospital staff was abolished as being no longer necessary.

The campaigns of 1848-1849 did not give an opportunity of properly testing this organization, as the units were not ready and the medical arrangements had, in a measure, to be improvised, mainly through the personal efforts of the famous Hanoverian surgeon, Stromeyer. But the changes that occurred in consequence of the abolition of the assistant surgeons and of their being replaced by the hospital assistants (*Lazarethgehilfen*) led to important innovations in the years 1852-1854. Friedrich Wilhelm IV was then King of Prussia and was chiefly responsible for the reforms that were introduced, expressing the opinion that questions connected with the life and health of the nation's soldiers should be considered not in the way that is cheapest but in the way that is best.* He issued a decree to the effect that no one should be appointed a surgeon in the army unless he had the best general education in the higher schools

* "Nicht so billig, wie möglich, sondern so gut wie möglich soll für Leben und Gesundheit des bewaffneten Landessohnes gesorgt werden."

of the country and had taken his degree in philosophy and medicine at the University. This at once placed the position of the army surgeon on a higher plane, especially as it was associated with the abolition of the less educated class of company or assistant surgeons, who had been evolved out of the *Feldscherer*. But the abolition of these led, as already mentioned, to the introduction of the military hospital assistant and military sick attendants into the army, and, in 1854, out of them stretcher-bearer companies for field service were created. These stretcher-bearer companies (*Krankenträgercompagnien*) were in the proportion of 1 for each army corps, with a personnel of 1 captain of cavalry, 3 subalterns, 3 assistant surgeons, 203 rank and file, and 8 transport drivers. They carried 45 stretchers, and were organized into sections of 15 stretcher squads each, 1 section being attached to each of the 3 light field hospitals, thus making the formation of these latter very nearly the same as the British field ambulance. In 1855 special service regulations were issued for the stretcher-bearer companies, and in 1859 a manual of training in first aid and transport of wounded generally. In 1855 also the various changes that had taken place in field medical organization since the issue of the regulations of 1834 were consolidated in the issue of new field medical regulations.

After the Crimean War and the Italian campaign, Von Roon, the Prussian War Minister, and Grimm appointed in 1860 a committee to report upon field medical organization generally. The result of this was the publication in 1863 of a revised series of field medical regulations. The chief changes introduced then were the granting of autonomy to the medical officers in the administration of the field medical service, the appointment of a surgeon-major to act as Director of Field Hospitals with each army corps, and

the reversion to the old system of 3 heavy field hospitals with each army corps, instead of 1 large main hospital. It was the disastrous results of a system of mixed control of medical and intendance departments in connection with hospitals in the Italian campaign which led the committee to place the whole of the administrative and technical work of field hospital services under the direction of a medical officer. He dealt directly with the principal medical officer of the corps or with the Intendant-General as required, and had, as assistants, a hospital quartermaster and a lieutenant of the transport corps. The divisional hospitals remained unchanged in the form of 1 light hospital to each division, with its transport or bearer section and its dépôt or dressing station section. The 3 heavy field hospitals were organised for 400 to 600 patients each and were divisible into 3 sections.*

These changes had scarcely come into force at the time of the Danish War of 1864. The stretcher-bearer companies were then put to the test for the first time and proved unequal to the task which they were called upon to perform. The number of the units was too small and the personnel too restricted, so much so that two men were told off in each company to assist the stretcher bearers, thus marking the origin of the auxiliary stretcher bearers, who afterwards became a recognised portion of regimental establishments. But the most serious defects of all were brought out in the 1866 campaign. The organisation of field hospitals had been carefully prepared, but the regi-

* The personnel of a heavy field hospital was 1 staff medical officer, 3 staff surgeons, 10 assistant surgeons, 3 apothecaries, 15 hospital assistants, 32 sick attendants, 14 for other duties, 3 female cooks and washerwomen, and 48 transport drivers. Transport material consisted of 6 four-horsed wagons for equipment, 2 for medical and surgical supplies, 1 omnibus for lightly wounded. There was no transport material for severe cases.

mental medical service had been forgotten in the new field regulations. There was, therefore, no co-ordination between the two, and the regimental service failed to work with the bearer companies and field hospitals in collecting and evacuating wounded. This defect was all the more accentuated by the fact that, although there was a Director of Field Hospitals, there was no one in the position of a divisional principal medical officer whose duty it would have been to link up these two services together within the division, and keep in touch with the principal medical officer of the army corps. Want of experience in handling the field hospitals also led to defective administration on the part of the directors, and many of the hospitals remained immobilized as cantonment or fixed hospitals, orders were not transmitted with sufficient promptitude and supplies failed to come up. The Red Cross movement and the Geneva Convention were in the early stages of their development at this time, and some progress had been made in the organization of voluntary aid in Prussia under the personal influence of Queen Augusta, so that, in 1866, voluntary aid took part in the care of sick and wounded under the control of a royal commissioner and military inspector. Although Austria had not acceded to the Geneva Convention at the time, the principles of the Convention were carried out, and many of the Austrian sick and wounded who fell into the hands of the Prussians were cared for by the voluntary organization, and thus lessened the disasters of the campaign.

The medical aspects of these two campaigns were carefully studied by an influential committee in 1867. It was composed of Grimm, the Director General of the Army Medical Service, two other War Office officials, and a number of eminent civil and military surgeons, including Langenbeck, Esmarch,

Bardeleben, Frierichs, Stromeyer, Lauer, and Loeffler. Their report laid the foundation of the existing system of field medical service in Germany. The first result was the promulgation of a decree in 1868 forming the army medical officers into a corps of officers, called the "Sanitäts Corps," and giving them the rights and honours granted to combatant officers. In effect the decree had much the same significance for the German army medical service as the formation of the Royal Army Medical Corps had for the British in 1898. It was followed in 1869 by the issue of new field medical regulations that made extensive alterations in the organization of field medical units. Briefly, these alterations were as follows:—

- (1) A principal medical officer, called *Divisionsarzt*, was appointed to each division.
- (2) Four men per company were to be trained as auxiliary stretcher bearers, and definite regulations were framed for the working of the regimental medical service in the field.
- (3) The bearer sections of the old light field hospitals and the corps stretcher-bearer company were amalgamated into independent medical units called medical detachments or bearer companies (*Sanitäts-detachements*) in the proportion of three for each army corps, one being held in reserve at corps headquarters and the other two being attached to the infantry divisions.*

* The personnel consisted of a cavalry captain in command, with 2 subalterns, 1 paymaster, 13 non-commissioned officers and 136 privates as stretcher-bearers; 7 medical officers, 1 apothecary, 2 quartermasters, 8 hospital assistants and 8 sick attendants as a dressing station party. The transport consisted of 6 ambulance wagons, 2 equipment wagons, 2 baggage wagons, and 30 stretchers, with 28 non-commissioned officers and men of the transport corps.

- (4) The dépôt or hospital sections of the light field hospitals and the heavy field hospitals were converted into twelve uniform field hospitals, of 200 beds each, divisible into two independent sections if necessary. They became army corps, not divisional, units.*
- (5) A reserve personnel was appointed to be held at the head of the line of communication of each army corps. This personnel was called the *Etappenlazarethpersonnel* or the *Lazareth-reservepersonal*, and consisted of 12 medical officers, 3 apothecaries, 27 hospital assistants, 36 military sick attendants, 9 others and 17 transport drivers. Their duty was to take over the cases in field hospitals and form a stationary field hospital (*Stehendeskriegslazareth*). They became, in fact, a clearing hospital.
- (6) A reserve dépôt of medical supplies was formed for each army corps. It was to be pushed up to the head of the line of communication and replenish the field units.
- (7) Fixed hospitals and Red Cross Societies' hospitals were recognized as definite units on the line of communication and at the base.
- (8) Regulations were laid down for the maintenance of continuous evacuation under the control of the Inspector-General of the lines of communication and his principal medical officer, but, in addition, a director of field hospitals was appointed to each line of com-

* The personnel of the new field hospital was 1 surgeon-major in command with 4 medical officers, 1 apothecary, 1 quartermaster, 9 hospital assistants, 12 sick attendants, and 4 others. The transport was 2 wagons for medical and surgical stores, 2 equipment wagons, 1 omnibus for medical officers and officials, with 23 non-commissioned officers and men of the transport corps.

munication, whose duties were to smooth away difficulties and to see by continuous inspections that the care of the sick and wounded within his area was uninterrupted.

- (9) Regulations were issued for the employment of voluntary aid under definite military control in war and for the supervision of its work in peace. Beyond the attempt that was made to control it in the 1866 campaign there was no real organization until 1869 when the International Conference of Red Cross Societies was held in Berlin.
- (10) A definite place was assigned to eminent civilian members of the medical profession as consulting surgeons in war, with the rank and pay of surgeons-colonel.
- (11) The carrying of first field dressings was made universal throughout the army.

With these important changes and this thorough organization of the field medical service it would have been thought that in the Franco-German War, which immediately followed their introduction, the duties connected with the care of the sick and wounded would have worked smoothly and well. Yet, although in all that concerned first aid on the battlefield, the collection of wounded and the co-operation of voluntary aid, much more was effected than in previous wars, the arrangements for evacuation broke down. Neither the medical service nor the transport and line of communication services had sufficient experience of the new organization, nor, indeed, were its principles and provisions generally known in the army at the time. The direction of the field hospitals was not well carried out ; some became clogged with wounded and immobilized, while others remained empty.

Evacuation along the lines of communication became hopelessly confused, because the line of communication commandants were overburdened with other transport duties and had no time to attend to the requirements of the medical services, an experience which taught a useful lesson and led to the subsequent formation of a special medical unit solely for the purpose of dealing with the evacuation of sick and wounded.*

The war of 1870-1871 was succeeded by a period of steady development, mainly in connection with the army medical equipment in order to bring it into conformity with the altered conditions of medical and surgical science and with the new teachings of bacteriology and asepsis. Extensive innovations were introduced in the facilities for scientific study, such as the postgraduate course in 1872, examinations in bacteriological and hygienic methods of research in 1886, and clinical and surgical operation courses in 1890. Hygienic and bacteriological laboratories were at the same time gradually established in the military hospitals, and army medical officers were appointed to carry on work in the public health laboratories and infectious disease institutions.

As regards field medical organization, the Franco-German war led to the appointment of a committee in 1872, under the presidency of *Generalarzt* Loeffler, but with the co-operation of Colonel v. Caprivi as War Office Commissioner, *Generalstabsarzt* Grimm and *Generalarzt* Schubert, to consider its lessons and formulate a new set of field medical regulations. These regulations appeared in 1878, and they have existed as the only field medical regulations of the German army until 1907. A new

* This unit is the sick and wounded transport unit, such as the Japanese, following the example of Germany, used with such admirable results in Manchuria.

manual for stretcher-bearer training was issued in 1887, which has also remained in force till 1907. But before then the Committee's labours led to the issue of army medical regulations of the nature of standing orders in 1873, by which the existing system of military service for medical officers and men of the medical corps came into force; medical officers, hospital assistants and sick attendants being formed into one corps under the command of the medical officers. Peace regulations followed in 1891.

In more recent times the Army Medical Service of Germany has been called upon to develop a service for colonial troops and for expeditions abroad; to introduce, in 1907, an army nursing service of women nurses into the home hospitals, and to bring the organization of voluntary aid more thoroughly than before into line with the actual requirements of war and into close and intimate touch with the military authorities.

The preceding historical account, as indicated in the opening sentences, deals with the development of the Prussian Army Medical Service. But there existed independent armies in Saxony, Bavaria, Württemberg, Baden, and Hanover during the greater part of that period, each with its own medical arrangements, and although all are now combined under the German Imperial Forces the Bavarian and Saxon armies have more or less independent organizations. In fact, of the German kingdoms, Württemberg alone appoints its medical officers through the Kaiser Wilhelm's Akademie. In Saxony the Army Medical Service made the same steady advances throughout a long history as those made by Prussia, and the influence of one of their greatest Surgeons-General, W. Roth, not only gave its officers a standard of efficiency second to none, but was also felt in the Prussian medical service. Thus also did the influence of Stromeyer, who belonged

to the Hanoverian army, extend to other German States and directly further the development of their medical services. In Baden the name of Bernhard von Back is the most honoured amongst its military surgeons. His experiences of war included the Italian campaign of 1848, and the campaigns of 1849, 1866 and 1870-1871, and his knowledge of the Austrian medical organization led him to introduce many useful changes in the field medical organization of his own army. In Bavaria the history of the Army Medical Service does not go so far back. It developed less rapidly than in Prussia, and it was not until the latter half of the nineteenth century that its organization came into line with that of the other German States.

The number of books that have been written on the historical development of the German Army Medical Service is great. Amongst the earlier works are historical accounts by Richter, Knorr, Löffler, Fröhlich, and others; amongst recent publications, from which most of the facts in this account have been borrowed, are those of Dr. Paul Myrdacz of the Austrian army, articles by Dr. Schjerner, the present Director-General of the Prussian Army Medical Service, historical notes in Oberstabsarzt Friedheim's "*Der Sanitätsunteroffizier*," the splendid volumes issued by the medical department of the Prussian War Office in 1899, 1901 and 1904 on "*Kriegs-Chirurgen und Feldärzte*," and the volume by Schickert, written in commemoration of the centenary of the foundation of the Army Medical School in Berlin. These latter writings are permeated with a high sense of the great traditions of the German army medical officer, and as such are worthy of close study.

CHAPTER II.

THE MEDICAL SERVICE IN TIME OF PEACE.
GENERAL MILITARY ORGANIZATION.

In Germany all males between the ages of 17 and 45 are obliged to perform military service on behalf of their country. Such service is of two kinds, namely, regular service (*Dienstpflicht*) and service in the *Landsturm* (*Landsturmpflicht*). The former applies to men between the ages of 20 and 39, and the latter to all between the ages of 17 and 45 who are exempt from service in the army.

Regular service is further divided into service with the standing army, service in the 1st and 2nd Bans of the *Landwehr*, and service in the special reserve (*Ersatzreserve*); while service in the *Landsturm* is divided into two contingents or Bans, the first up till the thirty-ninth year of age and the second up till the forty-fifth year.

Service with the standing army lasts seven years; it commences after the twentieth year of age. The first two or three years are with the colours, and the soldier then passes into the Reserve for five or four years. He is then classed in the *Landwehr*; in the 1st Ban for five years (or three years if he has served three years with the colours), and in the 2nd Ban till his thirty-ninth year. After that he enters the 2nd Ban of the *Landsturm*.

Men who are not required to serve in the standing army are classed from the beginning of their military

service as special reserve (*Ersatzreserve*), and are enrolled as such for 12 years. They may or may not do military training; but, if they do, there are three trainings, the first of 10, the second of 6, and the third of four weeks. Those that have done the training pass into the 2nd Ban of the *Landwehr* after their thirty-second year and remain in it up to their thirty-ninth year. They then enter the 2nd Ban of the *Landsturm*; but those who have not undergone training pass after their thirty-second year into the 1st Ban of the *Landsturm* up to the thirty-ninth year, instead of into the 2nd Ban of the *Landwehr*.

Youths of good education, who clothe, equip and feed themselves at their own expense during their period of service, pass into the Reserve after one year's service with the colours. They are known as the one-year volunteers (*Ein-jährige freiwillige*), and serve six years in the Reserve.

Provision is made for soldiers continuing their service with the colours up to 12 years or longer. They are called *Kapitulanten*, and form the backbone of the army as warrant and non-commissioned officers.

There are three classes of men with officer's rank: (1) the members of the *Offizierkorps*, or combatant officers, (2) the medical officers (the *Sanitäts-offizierkorps*), and (3) the military officials (*Militärbeamte*). Each of these classes has its own privileges, rights and honours, the medical officers coming midway between the officers and the officials. The latter occupy posts such as those of quartermasters, in offices, stores, &c., but they also include several other functionaries, such as the apothecaries, paymasters, accountants, &c.

The army as a whole is organized in army corps according to territorial districts, each army corps consisting of 2 divisions, each division of 2 brigades, each brigade

of 2 regiments, and each regiment of 3 battalions.* There are 23 army corps, of which 17 come under Prussia, 2 under Saxony, 1 under Württemberg, and 3 under Bavaria. Each of these independent kingdoms has its own war office and administers its own army, but, as a whole, they form in combination the army of the German Empire. The Bavarian Army, however, has a much more independent existence than the others, and has a medical service entirely independent of Prussia.

Colonial troops (*Schutztruppen*) are formed of volunteers from the standing army, and are serving at present in North China,† South-West Africa, Togoland, Samoa, German East Africa, and the Cameroons.

GENERAL ORGANIZATION OF THE MEDICAL SERVICE.

The army medical service forms a medical corps called the *Sanitätskorps*, but it has attached to it and placed under its command military and civil officials, such as apothecaries, quartermasters, and, more recently, army nursing sisters. As a whole it consists of the following elements:—

- (a) The *Sanitäts-offizierkorps*, or corps of medical officers.
- (b) The *Sanitäts-offizier-diensttuer*, or retired medical officers in retired pay appointments and medical men serving as one-year volunteers and as surgeons on probation with warrant officer's rank.

* There are certain exceptions to this normal organization.

† The troops in Kiao-chau are marines under the Ministry of Marine.

- (c) The *Sanitätsmannschaft*, or men specially trained and transferred from combatant units to the *Sanitätskorps* to become the non-commissioned officers of the corps.
- (d) The *Militärkrankenwärter*, or men enlisted direct into the *Sanitätskorps* and fulfilling their period of service with the colours exclusively as hospital orderlies and sick attendants.
- (e) The *Krankenträger* or stretcher-bearers of regimental establishments.
- (f) The apothecary officials.
- (g) The quartermaster officials.
- (h) The army nursing sisters.

THE "SANITÄTS-OFFIZIERKORPS."

The corps of army medical officers consists of medical officers only, and, as such, resembles very much the "Medical Staff" of the British army, previous to its amalgamation with the "Medical Staff Corps" into the Royal Army Medical Corps.

The officers have relative rank and titles, with fixed establishments, as follows :—

Title.	Rank.	Number.
<i>Generalstabsarzt</i> {	Lieut.-General or Major-General	1
<i>Generalarzt und Sanitäts-Inspekteur</i>	Major-General ...	4
<i>Generalarzt</i>	Colonel	18
<i>Generaloberarzt</i>	Lieut.-Colonel ...	39
<i>Oberstabsarzt</i>	Major	361
<i>Stabsarzt</i>	Captain	500
<i>Oberarzt</i>	Lieutenant	348
<i>Assistenzarzt</i>	2nd Lieutenant...	503

The establishments in the table^{ref} are those of the Prussian army only. The Saxon army has 3 *Generalärzte u. Inspekteur*, 4 *Generalärzte*, 34 *Generaloberärzte*, 42 *Oberstabsärzte*, 36 *Stabsärzte*, and 11 *Oberärzte* and *Assistenzärzte*. The number of the subaltern ranks is that of those actually commissioned. It is much below establishment. The Bavarian army has the following medical officers actually serving; 1 *Generalstabsarzt*, 4 *Generalärzte u. Inspekteur*, 4 *Generalärzte*, 17 *Generaloberärzte*, 54 *Oberstabsärzte*, 69 *Stabsärzte*, 74 *Oberärzte*, 20 *Assistenzärzte*. As in the Saxon army, the subaltern ranks are much below establishment, but there are nearly 1,000 of these ranks in the Reserve.

First Appointment.

Medical officers are appointed from the following classes of medical men :—

- (1) Students of the Army Medical School (*Kaiser Wilhelm's Akademie*) in Berlin.
- (2) One-year volunteer surgeons.
- (3) Medical men who have completed the whole period of their obligatory service in the ranks.

The students of the Kaiser Wilhelm's Academy, which is a medical cadet school, are commissioned as officers in the *Sanitäts-offizierkorps* after obtaining their degree in medicine at the University of Berlin. In Saxony and Bavaria, however, they may be commissioned by open competition amongst qualified medical men of the second and third class who have not been students at the Berlin Army Medical School. But before being commissioned as army medical officers, all candidates for commissions, including the cadets, must undergo the ordeal of being balloted for by the officers of the corps or division to which they

will be attached. The ballot does not take into consideration the military and professional character of the candidate, but his personal, moral and social qualities. If he passes this ballot, which is conducted with great formality, his name is then submitted to the Emperor for a commission as *Assistenzarzt*.

The rules with regard to one-year volunteer surgeons are somewhat complicated. Briefly they amount to this, that a medical student, after serving for six months with the colours, may be passed into the army medical reserve on the condition that he returns again on completion of his medical studies and serves as a one-year volunteer surgeon with the warrant rank of subordinate surgeon (*Unterarzt*). Afterwards, on passing certain examinations and the ballot above mentioned, he receives commissioned rank as *Assistenzarzt* in the Reserve. Inducements are held out to medical men to serve in this way, and such of them as have become assistant professors and lecturers at universities are allowed to complete their service in the university towns, others as far as possible in the garrisons selected by themselves, although the right to place them in any garrison where they may be needed is reserved.

Medical students who have completed the whole of their service with the colours as one-year volunteers in the ranks may pass into the Reserve as warrant officers with the rank of *Unterarzt*, and, subsequently, on passing certain examinations and the ballot, they may then become commissioned medical officers of the Reserve.

Strictly speaking, it is only the cadets of the *Kaiser Wilhelm's Akademie* who enter the *Sanitäts-offizier-korps* in the Prussian army corps and remain in it as a career. There is no limit of age for retirement. Medical officers are under the same rules as other officers of

the German army in this respect, and are given an opportunity of retiring voluntarily when they are reported upon as no longer fit for service from any cause or other. They have also liberty to retire at other times, but unless physically unfit for any military service they must then pass into one or other class of the Reserves according to their age and service.

Medical officers are promoted from one rank to another by the Emperor on the recommendation of the *Generalstabsarzt*. Such promotion is made according to seniority, and only under very exceptional circumstances by special selection. There appears to be no rule as to definite periods of promotion, officers being promoted only as vacancies in establishments occur. For example, practically all medical officers up to the rank of lieutenant-colonel are attached to regiments on a fixed establishment of 1 medical officer of major's rank, 1 of captain's, 1 of lieutenant's, and 1 of 2nd lieutenant's, to each regiment of three battalions. But one-half of the majors hold posts such as those of senior medical officers of garrison hospitals. The lieutenant-colonels fill the vacancies of principal medical officers of divisions, and the colonels those of principal medical officers of army corps.

Pay of Medical Officers.

Medical officers receive ordinary pay, special pay, field-service pay, reserve pay, and various allowances. Allowances are granted to medical officers in addition to pay under a variety of circumstances, as, for example, for filling vacancies in a higher rank, for doing duty away from their garrison, in lieu of rations, for performing orderly duty in hospitals, as rewards for saving life in cases of extreme frostbite,

drowning, sunstroke and attempted suicide, to cover cost of removal of house and family from one station to another, as well as the usual servants', lodging, and travelling allowances.

The ordinary pay of medical officers is as follows :—*

					Per Year.	
					£	s.
<i>Generalstabsarzt</i> —						
(a) If Lieut.-General	...	...	...	...	667	14
(b) If Major-General	...	...	...	...	513	0
<i>Generalarzt</i> as <i>Sanitäts-Inspekteur</i>	...	...	...	...	513	0
<i>Generalarzt</i>	...	...	...	...	438	12
<i>Generaloberarzt</i>	...	...	...	...	327	12
<i>Oberstabsarzt</i> in charge of hospitals	...	...	...	...	327	12
<i>Oberstabsarzt</i> with a regiment	...	...	...	...	305	2
<i>Stabsarzt</i> , on higher rate of pay	...	...	...	...	230	2
<i>Stabsarzt</i> , on lower rate	...	...	...	...	170	2
<i>Oberarzt</i>	...	...	...	...	94	10
<i>Assistenzarzt</i>	...	...	...	...	64	10

The *Generalstabsarzt*, the *Sanitäts-Inspekteure*, the *Generaloberärzte*, and the medical officers doing duty at headquarters receive special pay in addition to ordinary pay in virtue of their appointments. In the case of the *Generalstabsarzt* this amounts to £225 a year; the *Sanitäts-Inspekteure* and medical officers of the headquarters' staff get an addition of £45 each yearly, and the *Generaloberärzte* one of £57 10s. yearly.

The pay on field service is a special pay that takes the place of the ordinary pay, and depends partly on the rank and partly on the appointment. The pay of rank varies, also, according to whether the officer is doing duty in a mobile or in a fixed unit. In all cases a sum is also given on mobilization to enable the

* A compulsory deduction is made from ordinary pay for uniform and equipment. It amounts to at least £1 4s. monthly, and officers can draw upon their credit in the clothing and equipment account to that amount. If they so wish, subscriptions to the Widows' Fund and the Army and Navy Life Insurance Institution may be deducted from pay.

officer to buy himself special equipment, &c., for the field.*

Medical officers of the Reserve receive daily pay and a clothing allowance whenever they are called out for training; field officers receiving 12s. daily and a clothing allowance of £10 10s.; captains, 7s. 6d. daily and an allowance of £7 10s.; and subalterns 3s. daily and an allowance of £6.

On temporary absence on duty from his garrison a medical officer of field rank gets 5s., of captain's rank 4s., and of subaltern's rank 3s. daily; and there are other small additions to pay given for acting appointments and as charge pay. Medical officers of subalterns' rank receive an allowance of 6s. monthly as table money, and an allowance of £1 16s. monthly when they

* The monthly pay and mobilization allowance on service are as follows:—

(For the various appointments in this table see Chapter III).

Rank or Appointment.	Monthly Pay.		Mobilization Allowance.
	In Mobile Unit.	In Fixed Unit.	
Director-General of an army	£ s. 106 0	£ s. ...	£ 75
P.M.O. of an army	71 0	...	60
P.M.O. of an army corps or L. of C. and Consulting Surgeon	61 0	45 0	45
P.M.O. of division, and Director of field hospitals	43 5	...	35
<i>Oberstabsarzt</i>	43 5	37 0	35
<i>Stabsarzt</i>	30 0	25 0	25
<i>Oberarzt</i> and <i>Assistenzarzt</i> doing duty as <i>Stabsarzt</i> ...	21 5	15 0	} 25
<i>Oberarzt</i>	15 0	12 10	
<i>Assistenzarzt</i>	12 0	9 0	
Warrant M.O. doing duty as Subaltern M.O.	7 10	6 0	20

are sent to the larger garrison hospitals or university clinics for study. In hospitals with normal accommodation of 71 beds or upwards medical officers doing orderly medical officer's duty receive an allowance of 9s. monthly.* The rewards for saving life are 30s. for officers and 15s. for non-commissioned officers.

Servants' and lodging allowances vary according to place and rank. Medical officers ranking as major-general or lieutenant-general receive £75 yearly for lodging, those ranking as colonel £60, as lieutenant-colonel, major or captain £45, and as subalterns £28 10s. All ranks receive £14 yearly for service for each room required as an office, and £5 8s. for one horse, with £1 16s. for every additional horse. These are the maximum rates and are applicable to certain towns only. Other garrison towns are divided into four classes, with lesser rates according to the class to which they belong.

Travelling allowances depend on a variety of conditions, but, with certain provisions for minor contingencies, resolve themselves into a daily allowance, an allowance for cost of transport of the officer and his baggage and an allowance when there is a change of station. The daily and transport allowance varies according to rank, length of journey, duration of journey and whether the journey is in Germany or in a foreign country. Within the German Empire the highest commissioned ranks get 21s. to 28s., as daily allowance, the lowest 7s. 6d. to 10s. In foreign countries the highest allowance is 30s. and the lowest 15s. daily. The allowance for transport (railway and steamer fares, &c.) is practically the same for all commissioned ranks, namely, 1d. to 1½d. per kilometre by train or steamer,

* A smaller allowance of 3s. monthly is given to non-commissioned officers of the medical service when on orderly duty.

7d. to 1s. per kilometre by road, with a supplement of 3s. to 6s. for extra charges during the journey. The allowance when there is a change of station is £90 for officers of major-general's rank, together with £1 4s. for every 10 kilometres to meet expenses of transport. *Generalärzte* receive £50 and £1 per 10 kilometres for transport; other field officers £25 and £1, captains £15 and 8s., subalterns £10 and 6s. If they have no family they receive only one-half of these allowances.

The emoluments of the medical officers of the German army are thus very considerably increased, and the ordinary pay alone represents a much smaller proportion of the total emoluments than it does in the British army.

The pensions granted to medical officers are based on a sliding scale of $\frac{2}{60}$ of pay and allowances after 10 years' service and $\frac{1}{60}$ more for each additional year of service. Thus an officer retiring after 30 years' service would get $\frac{4}{60}$ or two-thirds of his pay and allowances as pension. Colonial service counts double towards pension. No pension that is given after 55 years of age, or after retirement for incapacity to earn a livelihood, is less than £150.

THE "SANITÄTS-OFFIZIER DIENSTTUEER."

This is at present an extremely important class in the German army, because of the very great deficiency in the required establishment of the lower ranks of commissioned medical officers. Practically 50 per cent. of these ranks are vacant, and the duties are performed by the one-year volunteer surgeons and warrant medical officers. As has already been explained, the class consists of medical students who have practically completed their course of study and are finishing their service with the colours as warrant medical officers

(*Unterärzte*). They receive pay of £1 16s. monthly, 9s. being deducted for uniform if they are acting for *Oberärzte* or *Assistenzärzte*. If they are definitely appointed to the post of an *Assistenzarzt* by the Director-General they are given the pay of that rank.

One-year volunteers have no claim to pay of any kind, but when they are transferred to a station distant from their homes they are entitled to the pay of a private soldier, whether they are serving in a medical capacity or with the colours. When they are employed to fill vacancies in the establishments of the *Ober-* or *Assistenzärzte* they are paid as *Unterärzte*.

If called out for manœuvres when they are on the standing army reserve, the *Unterärzte* receive 1s. 6d. daily pay and a uniform allowance of £4 10s. They are also entitled to servants' allowance that may amount in certain stations to £7 yearly, or, if married, to about £12, as well as to such allowances as the allowance for removal with or without a family from one station to another, travelling allowance, &c.*

THE "SANITÄTSMANNSCHAFT."

The *Sanitätsmannschaft* forms a body of warrant and non-commissioned officers and men for the medical services with regiments, but a certain proportion of this personnel is appointed to do duty in military hospitals and establishments.

The various ranks are as follows:—

<i>Sanitätsfeldwebel</i>	...	Sergeant-Major of the Medical Corps.
„ <i>vizefeldwebel</i>	...	{ Quartermaster-Sergeant of the Medical Corps.
„ <i>sergeant</i>	...	
„ <i>unteroffizier</i>	...	Sergeant of the Medical Corps.
„ <i>gefreiter</i>	...	Corporal of the Medical Corps.
„ <i>soldat</i>	...	Lance-Corporal of the Medical Corps.
	...	Private of the Medical Corps.

* The travelling allowance varies from 2s. to 5s. daily, the removal allowance from 7s. 6d. to £1 10s.

The pay varies from 6s. 6d. to £2 16s. monthly, with various supplementary allowances and considerable sums as service rewards and as *Kapitulation* money. Thus a soldier who agrees to serve a third year with the colours gets £2 10s., a fourth year £5, and after 12 years' service a gratuity of £50.

The *Sanitätsmannschaft* is recruited entirely from the regimental units of all arms. Thus a private of the medical service (*Sanitätssoldat*) is a man who has completed one year's service in a unit other than medical and who volunteers to enter the medical corps. If an insufficient number volunteers to fill establishments in the corps, men are transferred by command. They must be men of good conduct, physically fit for the medical service and of good education.

The men so selected are sent to the military hospital at the headquarters of the division, or to the largest military hospital in the district, and there go through a special course of instruction in army medical duties. They wear the uniform of the medical corps when they leave their regiments for this course. Each is given a copy of the manual for the medical corps, and the instruction is both practical and theoretical. It is carried out, under the supervision of the divisional principal medical officer, by the senior medical officer of the hospital and the officers under him, by the warrant and non-commissioned officers of the medical corps doing duty in the hospital and by the apothecaries. It includes instruction in the general duties of the army medical corps, special duties in and out of hospitals, anatomy and physiology, injuries and diseases, including first aid, bandaging and minor dressings, transport of sick and wounded, and care of sick and wounded in hospital, in addition to other instruction bearing upon duties in war, examination of recruits, &c. The course commences on the 1st

October of each year and lasts six months. An examination is then held at the headquarters of the army corps under the presidency of the principal medical officer of the corps, and in the presence of all the medical officers at the station.

The *Sanitätssoldat* also undergoes instruction in stretcher-bearer duties as laid down in the regulations for stretcher-bearers (*Krankenträgerordnung*).

On passing the examination the *Sanitätssoldat* rejoins his regimental unit, usually as a lance corporal of the medical service. Each company, squadron, or battery has one corporal, lance-corporal or private of the medical service attached to it in this way during peace as part of its establishment.

The number of warrant and senior non-commissioned ranks depends on the number of posts to be filled. Thus every large military hospital has a sergeant-major, whose duties are similar to those of the regimental sergeant-major; smaller hospitals have sergeants, and a variety of other posts are filled in this way by the *Sanitätsmannschaft*. In hospitals, however, they do not perform the duties of sick attendants or general duty orderlies, but only those of ward masters, military clerks, &c.

THE "MILITÄRKRANKENWÄRTER."

These are men who are enlisted direct into the medical corps and perform the whole of their service with the colours as sick attendants or nurses and general duty orderlies in military hospitals. One-year volunteers are not allowed to enlist in this way.

The number of men enlisted as *Militärkrankenwärter* is determined by the hospital requirements of each army corps, according to establishment tables prepared yearly by the principal medical officer. The distribu-

tion of the men so enlisted is such that each military hospital has half its *Militärkrankenwärter* serving in their first year and half in their second year of service, so that there is always a number of more or less trained sick attendants in each hospital. They rank as private soldiers, and must do their two years' active service in this way in the standing army. They are not allowed to become *Kapitulants* in the same way as the *Sanitätsmannschaft*, except in very small numbers. Thus five *Militärkrankenwärter* in each army corps may be selected to supervise the other sick attendants, and these may be given lance-corporal's rank after the first year of service. They are the only *Militärkrankenwärter* who are allowed to extend their service, but they receive no *Kapitulation* gratuities.

Militärkrankenwärter undergo a course of instruction on the same lines as is laid down in the manual for the *Sanitätsmannschaft*, but the course lasts as a rule only six weeks, and the examination is conducted by the senior medical officer of the hospital.*

THE "KRANKENTRÄGER."

The stretcher-bearers of the army are not incorporated into the army medical service in time of peace, but are trained as establishments of the combatant units during service with the colours. On mobilization those of them who have passed into the Reserve may form part of the personnel of the bearer companies.

The general commanding the army corps determines every year the number of men of the combatant units

* The pay of a *Militärkrankenwärter* is 6s. 6d.; a lance-corporal gets 8s. 10d., and if he is a *Kapitulant* for one year 14s. 10d., for two years 17s. 10d., and for three or more, £1 1s. 10d. monthly. There is no higher rank than lance-corporal.

who are to be trained as stretcher-bearers. Infantry battalions have to provide 4 stretcher-bearers for each Company and also the bearers that mobilize to form the bearer companies. Cavalry, foot artillery, engineers, and transport units train every year four men from each company or squadron ; machine-gun batteries and field artillery two men from each battery. The men must be in their second year of service, physically fit, of good character and able to read and write. Bandsmen in their first year of service, if physically fit for the duties, are also trained as stretcher-bearers.

The training consists of at least twenty lectures, given by the regimental medical officers in the garrison where the regiment is stationed, and practical exercises of sixteen days' duration are held every spring or summer at the headquarters of the train battalion. Not only the stretcher-bearers, but also the men of the army medical corps (*Sanitätsmannschaft*), as well as combatant and medical officers, are given the opportunity of taking part in these exercises and acquiring some knowledge of the handling of bearer companies in time of war. The work is inspected by the general officer commanding, and the principal medical officer of the corps is present at the inspections. A manual, the stretcher-bearer regulations (*Krankenträgerordnung*), is used as the text book for this training. It is an important manual of ambulance transport and of improvised methods of carrying wounded, fitting up country carts, railway carriages, &c.

PHARMACIST AND QUARTERMASTER OFFICIALS.

The duties connected with preparation, supply, care and dispensing of medical and surgical stores are performed by officials who are attached to the *Sani-*

tätsskorps, but belong to the class known as the military officials (*Militärbeamte*). These officials are of two classes, the higher and the lower. The first class have rank corresponding to that of officers but no definite grade and the second to that of warrant officers, non-commissioned officers and privates, but they may also be purely civil officials attached to the administrative offices of the army, and as such have no rank.

The apothecaries, with corresponding rank of officers, are graded as *Oberstabsapotheker*, *Korpsstabsapotheker*, *Stabsapotheker*, and *Oberapotheker*. The warrant ranks are one-year volunteer pharmacists and *Unterapotheker*, while the lower ranks are composed of men who are assistants or apprentices to apothecaries and are going through their period of military service. At present there are no *Oberapotheker* in time of peace, and the number of apothecaries in the Prussian army is 1 *Oberstabs*-, 23 *Korpsstabs*-, and 25 *Stabsapotheker*.

The pay of the higher apothecary officials is from £125 to £275 yearly, with allowances.

Quartermasters' duties in the medical service are also performed by military or civil officials, who do not belong to the *Sanitätsskorps*, but are attached to it in the same way as the apothecaries. They are known as army administrative officials (*Beamte der Militärverwaltung*), and may belong to the class of officials of the Imperial army (*Militärbeamte des Reichsheeres*), higher grades of which rank as officers without definite grade and the lower as non-commissioned officers and privates; or they may be civilians without military rank (*Zivilbeamte der Militärverwaltung*). The title by which those of them who act as quartermasters in military hospitals are known is that of *Lazarettinspektor*. In a few of the larger hospitals the quartermasters have the title of *Lazarett-direktor*.

THE ARMY NURSING SISTERS.

The army nursing sisters, called *Armeeschwestern*, or army sisters, form a new service created in 1907. The supply and training of the sisters is entirely in the hands of the Central Committee of the German Red Cross Societies. They must have two years' training and pass certain examinations under the rules of the Central Committee. All that the army medical authorities do in the matter is to apply to the Central Committee for trained sisters as required. The sisters wear a special military uniform, but have no permanent tenure of their appointments. If any proves unsatisfactory, she is simply returned to the Red Cross Society and is replaced by another. There are two grades, the *Oberschwester*, or matron, and the *Schwester*, or nursing sister.

About 27 were appointed in 1907, and 28 more are to be taken on establishment in 1908. They do not, however, replace those sisters of the religious Order of St. Vincent de Paul, who have for many years worked in some of the larger garrison hospitals.

These army sisters must not be confounded with another class of nursing sister, also trained by the Red Cross Societies, namely, the *Freiwilligekriegspflegerinnen*. These are ladies who volunteer for service in war only, but undergo a very complete course of instruction in peace, including two courses of practical instruction of one month each in a garrison hospital, and courses of instruction in one of the street accident ambulance stations for one month in two successive years. These ladies receive a diploma as volunteer nurse in time of war after passing an examination at the end of the courses of instruction, which includes, in addition to the practical instruction, attendance at a course of 12 theoretical lectures. They

wear a different uniform from that of the army sisters, are ladies of gentle birth, and frequently continue to work among the poor as nurses without pay.

THE RESERVES OF THE MEDICAL SERVICE.

The army medical service can draw on a vast reserve amongst medical men who have served as one-year volunteers and as *Unterärzte*, and amongst soldiers who have been trained as *Sanitätsmannschaft*, *Krankenwärter* and *Krankenträger*, as well as on the resources of voluntary aid.

All, except the voluntary aid resources, belong to one or other class of the Reserve noted in the brief account of the general military organization of Germany.

All persons belonging to the classes, forming or attached to the *Sanitätskorps*, who are liable to military service and are not regular army medical officers by career, or who have not extended their service, pass into the Reserve after two years' service with the colours, or after one year as a one-year volunteer, and remain in it for a period of five years. But a certain number, who are exempt from various causes from serving with the colours, are placed from their twentieth year onwards in the special reserve.

Each reservist who has served with the colours is obliged to go through two periods of training, which do not exceed eight weeks' duration. A special reservist of the medical corps must, however, do three periods of training, the first of 10, the second of 6, and the third of 4 weeks' duration.

Officers and men who have passed into the *Landwehr* and *Landsturm* are only obliged to go through periods of training when they apply to do so.

As a rule, the training of medical officers of the Reserve is confined to the subalterns who are coming up for promotion to *Stabsarzt*, and are ordered to attend a three weeks' course in surgical anatomy and operations.

ADMINISTRATION AND DISTRIBUTION OF PERSONNEL.

The Director-General of the army medical service, the *Generalstabsarzt*, is the head of the *Sanitätsoffizierkorps* and of all subordinate ranks. He is also the Director of the Army Medical School in Berlin, the *Kaiser Wilhelm's Akademie*, and as a rule receives the courtesy title of professor. He is also entitled in virtue of his rank to be addressed as "Excellency."* He holds office for life, or until retired by ill-health or other cause of inefficiency. Practically all the directors-general have died at their post. He is the head of the medical department at the War Office, and as such is independent of all other departments and in direct touch with the Emperor, to whom he reports in person at stated periods. His staff at the War Office consists of a deputy, known as chief of the section, with the rank of *Generalarzt* or *Generaloberarzt*, and 3 *Oberstabsärzte* as heads of sections, 3 *Stabsärzte* as assistant heads of sections, an official of the army administration, and the senior apothecary. In addition there are about 20 subordinates of the military official class as clerks. The sections deal with statistics and hygiene, personnel, and invaliding and material. The senior apothecary belongs to the last section.

* He is not entitled to this, if his relative rank is major-general; as it is only officers of the rank of lieutenant-general and upwards who are addressed as "Excellency."

Under the Director-General there are inspectors of medical services, who are *Generalärzte* with the relative rank of major-general. In order to distinguish them from the *Generalärzte*, who rank as colonels, their full title is *Generalarzt und Sanitäts-inspekteur*. These surgeons-general were appointed for the first time in 1906. They are four in number, and each has charge of one of the four medical inspectorates then established. These inspectorates are as follows:—

No. I, with headquarters at Posen, for the military districts of the 1st, 5th, 6th and 17th Army Corps.

No. II, with headquarters at Berlin, for the 2nd, 3rd, 4th and 9th Army Corps.

No. III, with headquarters at Cassel, for the 7th, 8th, 10th and 11th Army Corps.

No. IV, with headquarters at Strassburg, for the 14th, 15th, 16th and 18th Army Corps.

The 12th and 19th Army Corps, belonging to Saxony, come under the inspection of the surgeon-general at the Saxony War Office in Dresden who is assisted by a *Generaloberarzt* and a *Stabsarzt*; the 13th Army Corps, belonging to Württemberg, under that of the Stuttgart administration, while the three Bavarian army corps have their own distinct War Office and medical administrative control.* The inspectors are directly responsible to and report to the Director-General. Their staff consists of 1 *Stabsarzt*, 1 orderly, and such additional subordinate personnel as they may require from the local commanding officer. Their chief functions are to maintain uniformity of practice throughout the medical service of their district in

* The Bavarian Army Medical Service has a *Generalstabsarzt*, as director-general, with a staff of two *Generaloberärzte* and one *Oberstabsarzt*.

examining reservists and in deciding fitness or unfitness for service, to inspect all hospitals and other medical establishments at least once in four years, to put forward proposals as to repairs and improvements, to examine army medical field equipment of all kinds, to submit all medical and surgical stores in use in peace to periodical tests, to examine and report on all new inventions, to watch the training and scientific knowledge of active and reserve medical officers, and to submit a list of exercises for the winter work of medical officers. They can issue orders to general officers commanding the army corps in technical, sanitary and other matters, and make their remarks on the confidential reports of medical officers which are submitted to the general officer commanding.

Each army corps has a principal medical officer, called *Korpsarzt*, with the rank of *Generalarzt*; and each division has a principal medical officer, called *Divisionsarzt*, with the rank of *Generaloberarzt*,

The *Korpsarzt* is the head of what is known as the *Sanitätsamt* or medical office at the headquarters of the corps. This office is the army medical headquarters for all matters connected with the army medical service of the active army, Reserve, *Landwehr*, *Landsturm* or voluntary aid within the army corps district. Attached to it is a hygienic laboratory for bacteriological and chemical investigations. The *Korpsarzt* is assisted by a subaltern medical officer, by a corps staff apothecary, and by two non-commissioned officers of the *Sanitätsmannschaft* as clerks. The laboratory, as a rule, is placed in the charge of a *Stabsarzt*, detached from his regiment for the purpose, and a quartermaster (*Lazarettinspektor*) may also be detached from hospital duty, if necessary, to assist in the work of the *Sanitätsamt*.

The divisional principal medical officer is the link

between the army corps principal medical officer and the medical service with units and hospitals, &c., within the division, and is the technical medical and sanitary adviser of the general officer commanding the division. He is allowed a non-commissioned officer of the *Sanitätskorps* as clerk, but has no other fixed establishment in his office.

The remainder of the army medical personnel is distributed in peace time amongst the various military institutes, including the army medical school, in Berlin, garrison and other hospitals, and regiments. The chief point that should be noted in connection with this distribution is the fact that practically all the medical officers below the rank of lieutenant-colonel are attached to regimental units, and that the hospital services are performed by medical officers temporarily on command from their regimental units for duty in the hospitals.

The *Kaiser Wilhelm's Akademie* absorbs most of the non-regimental medical officers. Its immediate chief is a *Generalarzt*, with the rank of major-general, who is deputy director of the school, two *Oberstabsärzte* and 42 *Stabsärzte*, who act as instructors, directors of studies or assistants in the clinics of the Charité Hospital.

In each garrison there is a garrison-surgeon who is the divisional principal medical officer at the divisional headquarters' station, but in other places may be a retired medical officer, whose duties are to supervise the general sanitary condition of the garrison and attend professionally on officers, families and officials not belonging to regimental units. In fortresses, such as Metz, the garrison-surgeon has much the same position and duties as a principal medical officer of a division, and may be of lieutenant-colonel's rank. Retired officers doing duty as garrison-

surgeons receive an addition of about £65 a year to their pension with lodging allowance of their rank.

The regimental units have a fixed establishment of medical officers, subordinate medical establishment and stretcher bearers. An *Oberstabsarzt* is attached to the staff of each regiment. He is the responsible head of the medical service within the unit and directs the work and training of the junior medical officers warrant medical officers, one-year volunteer surgeons, subordinate medical personnel and stretcher bearers, as well as the sanitary service and treatment of sick in the regiment.

Every battalion of infantry, foot artillery, engineers, supply and transport corps and similar units has a *Stabsarzt* attached to the battalion staff, as medical adviser and director of medical services within the battalion under the regimental medical officer. In addition a fixed number of subaltern medical officers is also attached to each regiment, and is at the disposal of the regimental medical officer for duty in the regimental sick or inspection rooms, instruction of subordinate medical personnel and stretcher bearers, attendance at camps of training and musketry, &c. These officers are also held at the disposal of the local military authority for orderly and ward duties in the military hospital of the station.

The subordinate medical personnel with regimental units has already been mentioned, namely, one non-commissioned officer or lance-corporal of the *Sanitätsmannschaft* with each company, squadron, battery or similar unit, along with a private of the *Sanitätsmannschaft* under training. Four stretcher bearers are trained in each squadron or company in cavalry, infantry and foot artillery, and two stretcher-bearers in each machine gun or field artillery battery.

The distribution of medical personnel in hospitals

differs in peace time considerably from that of other countries. The medical officers are all on command from regiments, as a rule, for one year only. A roster is prepared and submitted yearly by the corps principal medical officer to the general officer commanding an army corps detailing the regimental medical officers who are to do duty in the garrison hospitals during the year, and they perform these duties in addition to their regimental duties. The only officers exempt from regimental duty are the senior medical officer of the hospital and the officers on medical orderly duty, who have to reside in the hospital.

As regards the *Sanitätsmannschaft*, a *Sanitätsfeldwebel* is appointed to each of the larger hospitals and about one-half of the regimental *Sanitätsmannschaft* in peace is on command for duty in hospitals as wardmasters, clerks, &c. The *Militärkrankenwärter*, or sick attendants, are always hospital duty men and not regimental. The number in peace varies according to requirements but is, as a rule, 1 to every 20 beds.

The apothecary officials and subordinate apothecary personnel do duty in medical stores, in the office of principal medical officers of army corps, as well as in military hospitals. The last have one to three of the apothecary class, according to the size of the hospital. The *Oberstabsapotheker* is on the headquarters staff at the War Office, the 23 *Korpsstabsapotheker* are distributed to the army corps *Sanitätsamt*, and the 25 *Stabsapotheker* to the garrison hospitals.

Quartermasters or accountants are also appointed to hospitals, according to the size of the hospital.

Army sisters at present are not appointed according to any fixed establishment, but provision is made for introducing them into all military hospitals gradually.

MILITARY HOSPITALS AND OTHER ESTABLISHMENTS.

Military hospitals and establishments in Germany are classified as follows :—

- (1) Regimental sick and inspection rooms (*Revier krankenstube*).
- (2) Garrison hospitals (*Garnisonslazarette*).
- (3) Auxiliary hospitals (*Hilfslazarette*).
- (4) Local hospitals (*Ortslazarette*).
- (5) Hut hospitals (*Barackenlazarette*).
- (6) Civil institutions (*Zivilanstalten*).
- (7) Convalescent homes and institutions for special treatment. (*Genesungsheime, Militärkuranstalten*).

Regimental Sick and Inspection Rooms.

These are established in each regimental barracks for the treatment of cases likely to recover after a short period of rest and treatment. Infectious cases, including tubercle and itch, are excluded from treatment in these rooms. The room is usually one of the barrack rooms of each battalion, and is equipped with six or more hospital beds, a small dispensary, office table, &c. A non-commissioned officer of the *Sanitätsmannschaft* is placed in charge of the room.

Garrison Hospitals.

Garrison hospitals are established in all garrisons with a strength of 600 men or more. In garrisons with less strength the sick requiring hospital treatment are sent to the nearest garrison hospital or, in exceptional circumstances, are admitted into civil hospitals of the locality. The garrison hospitals have a normal accommodation for 4 per cent. of the strength of the

garrison ; in some cases of only 3·5 per cent. There are 227 garrison hospitals in the Prussian, 21 in the Saxon, and 18 in the Bavarian army corps districts.

All garrison hospitals are under the medical department of the War Office as central authority *Centralbehörde*, but the hospitals belonging to the cadets' institutions, the non-commissioned officers' schools, military boys and orphan asylums, and prisons are directly under the departments of the War Office that deal with these institutions.

The general officer commanding an army corps has general supervision over military hospitals, but the direct district authority or *Provincialbehörde* is the principal medical officer and the principal intendance officer of the corps. There is, in fact, a kind of divided control, the principal medical officer having disciplinary control over the medical personnel or *Sanitätskorps* and the intendance officer over the military officials or *beamte* such as the quartermasters, apothecaries, &c.

The direct local authority or *Lokalbehörde* is either the medical officer in charge or a hospital committee of management. With the exception of the medical officer in charge of the garrison hospital at the headquarters of a division, who is *ex officio* the divisional principal medical officer at most of the divisional headquarters,* all other medical officers in charge are appointed by the general officer commanding the army corps on the nomination of his principal medical officer. Hospital committees of management (*Lazarett-commission*) are only appointed where the medical officers are civilians or of warrant officers' rank. They are composed of a military officer, who ad-

* The charge of the two garrison hospitals at Berlin are special appointments.

ministers discipline and interior economy, and a medical officer, appointed by the corps principal medical officer, who administers the technical medical service. A military official may also be appointed to the committee, if available, and he takes over the administration of interior economy. He is appointed by the intendants department and represents it on the committee.

The hospitals are divided into divisions, or stations as they are called, with medical officers and warrant or non-commissioned officers of the *Sanitätsmannschaft* in charge.* There is also in each hospital at the headquarters of an army corps a laboratory for clinical, chemical and bacteriological examinations. The bacteriological and microscopic section of the laboratory is under a regimental medical officer on command for the purpose, the chemical section under the staff apothecary of the corps.

In divisional headquarters' garrison hospitals there are smaller laboratories, but as a rule the important analytical work of all garrison hospitals and the hygienic investigations are referred to the corps headquarters' laboratory.†

There are four groups of diets and three meals, breakfast, dinner and supper. The breakfast meal consists in all diets of coffee or tea, milk and broth. The dinner is 175 grammes meat with one dish of fresh or fried vegetables and potatoes, the different groups of diet depending on alterations in the amount

* These divisions are four in number: (a) surgical, (b) medical, (c) eye and ear, (d) venereal and skin.

† The work of the chemical section of the laboratory is gradually being absorbed by special chemical laboratories established for the analyses of water, drugs, medico-legal cases, and everything connected with food, clothing, equipment, &c. There are seven of these in Prussia (including one at the Kaiser Wilhelms Akademie), one in Saxony, and one in Württemberg.

of vegetables. The evening meal varies according to the amount of soup or broth allowed with it. But there is a variety of extras and drinks of all kinds that can be added to the diets.

The care of the wards in military hospitals is in the hands of the *Sanitätsmannschaft*, who are generally employed as wardmasters, while the nursing and general duties are in the hands of the *Krankenwärter*, some of whom may be purely civil sick attendants. Under certain circumstances army nursing sisters are employed. About half the regimental *Sanitätsmannschaft* are on command for a tour of duty in the hospital, and for every 20 beds there is a sick attendant, although the number varies according to requirements. Each hospital also has a staff of engineers, mechanics, labourers, laundry women and cooks according to requirements. The cooks and kitchen employés are usually women.

In each hospital of 71 beds or more there are a medical and surgical store under a medical officer and a dispensary in charge of an apothecary official. The dispensary is divided into two sections, one for medical and the other for surgical material. The apothecary in charge has not only to dispense all prescriptions but to prepare simple pharmaceutical preparations from the crude material, and take charge of all medical and surgical supplies for the regimental units and for the mobilization equipment. Hospitals with 121 to 140 beds have two, those with 241 and over three military apothecaries.

The interior economy of the hospitals is in the charge of accountants, quartermasters or administration officials, representing various grades of the administration class of officials. Thus hospitals with 50 beds or under have an accountant (*Rechnungsführer*) as quartermaster, those with 51 to 120 beds a hospital adminis-

tration official (*Lazarett-verwaltungsinspektor*) or hospital quartermaster (*Lazarett-inspektor*); those with 121 to 200 beds a senior and a junior hospital quartermaster; those with more than 200 beds a senior and two or more junior hospital quartermasters in addition to hospital administration officials on probation. The subordinate personnel depends upon requirements. These officials supervise the work of the *Krankenwärter* employed on general duty, the engineers, mechanics and the women employed in the kitchen, laundry and bedding stores.

The Auxiliary Hospitals.

These are additional buildings or huts equipped as hospitals, when there is an increase in the number of sick above the normal, or when there is an epidemic. They are auxiliary to and form branches of the local garrison hospital.

Local Hospitals.

These are established only as temporary hospitals in localities where troops are engaged in the larger field manœuvres. They are more or less of the nature of cantonment hospitals opened in areas occupied by troops on field service; and are only used when it is not possible to transfer the serious cases of illness to garrison or local civil hospitals.

Hut Hospitals.

These are hospitals established at permanent training and musketry camps.

Civil hospitals.

Civil hospitals are rarely, and only under special circumstances, used for the reception of cases of illness amongst soldiers.

Convalescent Homes and Institutions for Special Treatment.

There are at present 14 convalescent homes and establishments for officers and men of the Prussian army, two for the Saxon, and one for the Bavarian army at various health resorts and watering places in Germany. These are described in the Appendix IV.

MEDICAL AND SURGICAL STORES.

As has already been noted, each of the garrison hospitals with more than 70 beds has a dispensary and a medical and surgical store, the latter under a medical officer, who is technically assisted by an apothecary. This store supplies not only the needs of the local troops, but must prepare such pharmaceutical preparations, &c., as may be required of it by the principal medical officer of the corps. Subordinate medical personnel and *Krankenwärter* are placed on duty in the store. The key must be kept by the medical officer.

Each army corps has a medical and surgical supply depôt attached to the garrison hospital at the headquarters of the corps. It is divided into a medical and a surgical material section, the latter under an *Oberstabsarzt* or *Stabsarzt*, and the former under a staff apothecary. Attached to the surgical material section is 1 subaltern medical officer as assistant, and to the medical section 1 one-year volunteer apothecary.

Sanitätskorps personnel and *Krankenwärter* are attached for subordinate duties as required. These depôts supply medical and surgical material, reagents, disinfectants, &c., to the military hospitals in the corps command.

The principal depôt of the army medical service, the *Hauptsanitätsdepot*, is at Berlin. Its function is to examine and receive the stock of scheduled medical and surgical material of the army; to carry out repairs of instruments; to act as an institute for studying and testing instruments, dressing material, &c.; for instructing medical officers, to comply with the requisitions of the corps depôts; to furnish detached posts with medical and surgical material on mobilization, and to carry out any special duty entrusted to it by the War Office. The instruction of medical officers and apothecaries in matters connected with medical and surgical stores has been added to its functions recently. The depôt is directly under the principal medical officer of the Guards Corps, with an *Oberstabsarzt* in charge; the remaining personnel consists of officials and subordinates of the medical and surgical depôt of the Guards Corps, but 1 staff apothecary, a hospital quartermaster, a mechanician, and an experienced senior non-commissioned officer of the *Sanitätskorps* are employed in it exclusively.

Fortress medical and surgical depôts are established at fortress garrison hospitals for the maintenance of a supply of material in case of mobilization and as a provision in case of siege. There is a committee of management under the senior medical officer of the hospital, consisting of the garrison surgeon and a hospital administration official. The staff apothecary is attached to the committee.

For mobilization purposes the field medical and

surgical material of field units is kept in special dépôts at the train dépôt of each army corps, together with the transport and other equipment of the unit. Each unit has its own compartment for its own material, stored and laid out in such a way as to render inspection rapid and easy.

ARMY MEDICAL EDUCATIONAL ESTABLISHMENTS.

There is only one army medical school in Germany, the *Kaiser Wilhelm's Akademie* in Berlin. It is situated at present in the Friedrichstrasse, in the old historic buildings of the *Friedrich Wilhelm Institut*, but new buildings are in course of erection close to the Charité Hospital and the educational institutions of the Faculty of Medicine of the Berlin University. These buildings occupy a large area of about 6 acres, with a width of 150 and a depth of 200 yards. They will form some of the most monumental buildings in the German Empire, and will probably be opened in 1910.

The school is a medical cadet school similar in function to that of the Army Medical School at Lyons in France. Only army medical students of the kingdoms of Prussia and Württemberg go through the curriculum in it. They must remain in it five years, and during that time attend the regular courses of instruction in the faculty of medicine of the Berlin University and the clinical instruction in the university clinics at the Charité Hospital, of which the director is a *Generalarzt*, with the rank of major-general, and to which a large number of *Stabsärzte* of the regular army is attached as assistants to the clinical professors. At the end of the five years the army medical cadets must pass the State examination for qualification to practise medicine,

and then, in accordance with a recent civil law, must engage in medical and surgical practice as assistants for one year before the full qualification to practise medicine is obtained. The army medical cadets therefore must pass a sixth year in the clinical wards of the Charité Hospital before being allowed to practise as *Assistenzärzte*.

The junior *Stabsärzte* and the senior subaltern medical officers must go through a postgraduate course, called the *Fortbildungscursus* or *Operationscursus*. They are placed on command for this course by the War Office.* The course consists of attendance at the clinics of universities and larger hospitals.

Recently an institute for postgraduate study, the *Kaiserin Augusta Haus*, was opened in Berlin near the Charité, and army medical officers may go through a postgraduate course there. The course lasts, as a rule, three months.

Scientific libraries for the education and training of medical officers are established in each army corps district, usually at the headquarters' garrison hospital.

Every summer there are staff rides for medical officers under the direction of a general staff or other officer in each army corps. A ride lasts as a rule three days, and about 20 or 30 medical officers take part in it.

Further, each medical officer on the active list must submit a winter essay dealing with some special subject of scientific work. The subjects are set by the Director General and are generally connected with military hygiene or subjects affecting the army medical service. The essays have to be written, as a rule, when the officer is in the rank of *Oberarzt*. He is

* Recently the higher administrative officers have also been made to attend a *Fortbildungscursus* at the "Kaiser Wilhelm's Akademie."

given six months to prepare it from the time he is informed of the subject of essay. The principal medical officer examines and marks the essays.

Opportunities are given to army medical officers, who are specially qualified, to continue their education by being appointed to scientific institutions and by travelling for purposes of study in foreign countries. These appointments last from one to two years. In the Saxon army corps, for example, about eighteen posts are available in clinical institutes, larger civil hospitals and scientific institutes for army medical officers, and may be occupied by them for periods of two years.

During the winter months war games for medical officers are conducted by an officer of the general staff in every garrison town. He also gives lectures to medical officers on the principles of tactics and strategy, and prepares written schemes for them to work out. Medical officers are also instructed in map reading and sketching.

THE COLONIAL MEDICAL SERVICE.

The medical service with troops in the German colonies or protected territories is recruited from the army medical service. Its administration is in the central administrative department of the colonial forces in the Imperial German Colonial Office. The officer in charge of its administration is an *Oberstabsarzt*, and he is assisted by a junior *Oberstabsarzt* or *Stabsarzt*. He has not the title or status of chief or director-general, but only that of *Referent*, or officer to whom questions are submitted for opinion, his functions being in a way similar to that of the medical officer appointed to the India Office in London.

His full designation is *Referent der Medizinalabteilung des Reichs-Kolonialamtes*.

Medical officers are appointed to the service by voluntary application, and they may come from the Prussian, Saxon, Bavarian or Württemberg army corps. The tour of service in the colonies varies according to locality. It is $1\frac{1}{2}$ years, for example, in West Africa, 2 in East Africa, and 3 in South-West Africa. The pay is £250 annually for *Assistenzärzte*, £400 for *Oberärzte*, £480 to £512 for *Stabsärzte*, and £600 for *Oberstabsärzte*. No officers above *Oberstabsarzt* rank are sent to the colonies. On return from their tour of service the medical officers rejoin their army corps at home. The subordinate medical personnel is recruited in the same way by voluntary application on the part of non-commissioned officers and men of the *Sanitätskorps*. There is also a corps of native military sick attendants, and in the principal hospitals there are nursing sisters of the German Women's Association for the treatment of tropical diseases.

The colonial medical service has a distinctive uniform of grey cloth tunic with roll collar, grey cloth riding breeches with brown leather riding boots, and a grey cloth forage cap, with blue band. A grey slouch hat is worn in full dress.

Medical officers of the service may be appointed to posts in the school of tropical medicine in Hamburg, and are also sent on journeys for the study of tropical diseases.

ARMY MEDICAL JOURNALS, SOCIETIES, &c.

There is only one journal specially devoted to army medical matters, the well-known *Deutsche Militär-ärztliche Zeitschrift*, which is now published on the

5th and 20th of each month. It was originally instituted in 1843 by Dr. H. Klencke and Dr. E. Helmbrecht under the title of "*Allgemeine Zeitung für Militär-ärzte*," for the advancement and development of the army medical service, for discussions of its interests and for dissemination of professional information in connection with military medical practice. The journal existed under this title for six years only. It was resuscitated in 1860 by *Generalarzt* Dr. Löffler and *Oberstabsarzt* Dr. Abel under the title of "*Preussischer Militärärztliche Zeitschrift*," but this lasted two years only. Eventually Von Leuthold, who subsequently became Director-General, founded in 1872 the present "*Deutsche Militärärztliche Zeitschrift*." Since then it has been issued once a month until 1907, when it became a bi-monthly paper.

For the colonial medical service there is the "*Archiv für Schiffs- und Tropen-Hygiene*," which is issued monthly in connection with the school of tropical medicine in Hamburg, and deals chiefly with tropical medicine and hygiene.

Each army corps has an army medical society, and the medical officers meet regularly to read and discuss papers. Abstracts of these papers and discussions are published in the "*Militärärztliche Zeitschrift*."

An important annual publication is "*Roth's Jahresbericht über die Leistungen und Fortschritte auf dem Gebiete des Militär Sanitätswesens*." This contains a very full and concise notice of official changes in the army medical services of different armies during the year, and abstracts of all important articles, books, or papers bearing upon army medical matters, diseases of military life, &c., in all countries. It was instituted by the late *Generalarzt* Roth, of the Saxon Army, in 1874, and is now continued by the editorial staff of the "*Militärärztliche Zeitschrift*." It is, in fact, a summary

of the contents of this bi-monthly journal, though by no means limited to that.

The medical department of the War Office publishes from time to time in book form many important monographs and papers under the title "*Veröffentlichungen aus dem Gebiete des Militär Sanitätswesens*," the thirty-eighth of which appeared in 1908 and the first in 1892.

Another series of publications of the army medical department of the Prussian War Office is the set of volumes describing the different garrisons from a hygienic point of view, entitled "*Garnisonsbeschreibungen von Standpunkt der Gesundheitspflege*." Eight volumes have appeared containing full details and plans of barracks and hospitals, water supply and drainage, and descriptions of the health conditions of the locality.

The annual health reports of the army are published separately for Prussia, Bavaria and the colonies. The principal report is the *Sanitäts-Bericht* of the Prussian army corps, including the Saxon and Württemberg army corps. It also includes the statistical report of the health of the troops in East Asia (North China). The annual statistics are for the period 1st October to 30th September. The Bavarian army publishes a separate *Sanitäts-Bericht* for the same annual period. The colonial volume is the *Medizinal-Bericht über die Deutschen Schutzgebiete* which is published by the Imperial Colonial Office and gives statistical and other details of the health conditions in German East Africa, Cameroons, Togoland, German South West Africa, German New Guinea, the Carolines, Marian and Marshall Islands and Samoa. Both the Prussian and Bavarian war offices also publish International Statistical Tables as Appendices to their *Sanitäts-Bericht*.

The "*Bibliothek von Coler*" is also an important series of books that are being published from time to time by army medical officers in commemoration of their former Director-General, *Generalstabsarzt* v. Coler, under the editorship of the present Director-General, *Generalstabsarzt* Schjerning. The twenty-fourth volume of this series was published in 1906, although the second part of the twenty-second volume on military surgery appeared later. The series commenced in 1901, and some of the volumes have already been issued in second editions.

CHAPTER III.

THE MEDICAL SERVICE IN TIME OF WAR.

GENERAL ORGANIZATION.

Field organization is divided into three zones: the zone of the field army, or the *Operationsgebiet*; the zone of the line of communication, or *Etappengebiet*; and the zone of the home territory, or *Heimatsgebiet*.*

In the *Operationsgebiet* the forces are organized into armies of four to five army corps, and there is an Imperial headquarters that controls their operations.

For the *Etappengebiet* there is a general inspectorate of the lines of communication and railways on the Imperial headquarters staff, and under it there are subordinate inspectorates for each army, the function of which is to have troops ready for reinforcing the wastage of the army and for maintaining the line of communication, to move up supplies, and to bring back the sick and wounded.

The *Heimatsgebiet* is administered by the War Office in Berlin and by the army corps and divisional commands of the various military districts in the home territory, in much the same way as in peace, with this exception, that the posts of generals commanding and their staffs are filled by deputies, usually from the reserve of officers, who are appointed to take their

* When a portion of the enemy's territory has been completely occupied by the invading army, a fourth zone, called the *Gebiet des General-Gouvernements*, under a military governor is formed between the *Etappen-* and *Heimats-gebiet*, but this does not affect the medical organization.

place when the troops move into the field. In other words, each army corps marches into the field complete with its staff, and its place is taken by troops of the *Landwehr* and *Landsturm*, the garrison hospitals being then called reserve units.

GENERAL MEDICAL ORGANIZATION.

The medical service is organised on corresponding lines, and each zone has its own special medical units. The details of personnel and equipment of these units are shown in Appendix I.

Operationsgebiet.

In the zone of the field army the following are the recognized *échelons* of the medical service :—

- (1) The regimental medical service.
- (2) The army medical battalions, consisting of—
 - (a) Battalion staff.
 - (b) Bearer companies.
 - (c) Field hospitals.
- (3) The medical service of the reserve divisions.
- (4) The medical service in siege operations.

Etappengebiet.

In the zone of the lines of communication there are the following units :—

- (1) Clearing hospitals and clearing hospital detachments.
- (2) Line of communication hospitals, with—
 - (a) Sections for slight cases of wounds or sickness.

- (b) Sections for convalescents.
- (c) Sections for infectious diseases.
- (3) Units for distribution of patients, organized as—
 - (a) Sick and wounded transport sections.
 - (b) Refreshment stations and stations for dressing wounds.
 - (c) Collecting or distributing stations.
 - (d) Ambulance trains, auxiliary ambulance trains, and ordinary trains for transport of sick and wounded.
 - (e) Hospital ships, auxiliary hospital ships, and river boats.
- (4) Units for forwarding medical and surgical stores and other army medical equipment; consisting of—
 - (a) Advanced depôt of medical and surgical stores.
 - (b) Base depôt of medical and surgical stores.
- (5) Voluntary aid units.

Heimatsgebiet.

In the zone of the home territory there are—

- (1) Reserve or base hospitals.
- (2) Fortress hospitals and the fortress medical service.
- (3) Information bureau for sick and wounded.
- (4) Voluntary aid units.

THE ADMINISTRATION OF THE MEDICAL SERVICE DURING WAR.

The general direction of the medical service of the field armies is under a principal medical officer of the

field forces, who is called the *Chef des Feld-Sanitäts-wesens*. He belongs to the staff of the Imperial headquarters, and as such controls the medical service of both the *Operations-* and the *Etappen-Gebiet*. He has disciplinary power of a general officer commanding a division over the medical personnel. His rank is that of *Generalstabsarzt*, and, as a rule, he would be the director-general of the army medical service for the time being. He is assisted by two *Oberstabsärzte* and one *Stabsarzt*.

On the headquarters staff of each army there is a *Generalarzt-Inspekteur* as principal medical officer. His official title is *Armeearzt*, and he has the disciplinary power of a general officer commanding a brigade. He is assisted by one *Stabsarzt* and one *Oberarzt*.

Each army corps has a *Generalarzt* as principal medical officer. He is called the *Korpsarzt*, has disciplinary powers of an officer commanding a regiment, and has on his staff a consulting surgeon, a sanitary officer, an *Oberarzt*, and a senior apothecary. The consulting surgeon is appointed by the Emperor, on the recommendation of the director-general, from amongst civil surgeons of renown. He is given the rank of *Generalarzt*, *Generaloberarzt*, or *Oberstabsarzt*. He is also given a personal staff of one *Oberarzt* and a subordinate personnel. The sanitary officer is an *Oberstabsarzt* of the regular army medical service.

Each division has a *Divisionsarzt* as principal medical officer. He has the rank of *Generaloberarzt* and the disciplinary power of an officer commanding an independent battalion. He has an *Oberarzt* on his staff, except in the case of a cavalry division, the principal medical officer of which has no assistant medical officer.

The inspector-general of the lines of communication and field railways has no principal medical officer. Being on the Imperial headquarters staff he refers

medical questions to the principal medical officer of the field forces. But to each inspectorate under him, *i.e.*, on the line of communication of each army, there is appointed a principal medical officer, who is called the *Etappenarzt*. He has the rank of *Generalarzt*, and is partly under the orders of the inspector of the line and *Armeearzt*, and partly under the direct orders of the principal medical officer of the field forces. He has on his staff an *Oberarzt*, a senior apothecary, and a consulting sanitary officer. He has also under him *Kriegslazarett direktoren*, or directors of clearing hospitals, in the proportion of one for each army corps of the army to which the line of communication belongs. The consulting sanitary officer is selected in the same way as the consulting surgeon of an army corps, is given similar rank and has a subordinate personnel attached to him. The rank of director of clearing hospitals is *Generaloberarzt* or *Oberstabsarzt*, and he has an *Oberarzt* as assistant.

The duties of the *Etappenarzt* are important and various. He is responsible for making preparations in advance for the reception, care, feeding and evacuation of the sick and wounded of the field army, especially after great battles, when the wounded are likely to come into his line of communication in vast numbers; for setting free the field hospitals; for organizing a sufficient personnel for the care of the sick and wounded in the hospitals of his line of communication; for establishing special hospitals, such as hospitals for mental diseases and isolation hospitals, as required; for making provision for the removal of sick and wounded from the *Etappen-* to the *Heimats-gebiet*; for sending up stores and equipment for the regimental medical service and field medical units; for general supervision of the medical service on the line of communication; for the general regulation of voluntary aid

on the line of communication, for which purpose a line of communication voluntary aid delegate is attached to his staff; and for advising the inspector of the line on all matters connected with the prevention of disease within his zone. He commands all the medical personnel in his zone and has the disciplinary powers of an officer commanding a regiment.

The duty of the consulting sanitary officer is purely that of a scientific expert. He cannot interfere in any way in a military sense. His work is confined to the line of communication to which he is attached, although the army principal medical officer can bring him into the zone of the field army in order to investigate any special outbreak of disease or to carry on other expert sanitary investigations there.

The directors of clearing hospitals, or, as they are called, "war hospital directors," *Kriegslazarett-directoren*, are the most important of the assistants of the *Etappenarzt*. They are chiefly responsible for directing the work of clearing the field hospitals of their army corps. Under the *Etappenarzt*, they control the clearing hospitals and clearing hospital detachments. But they have also to direct the evacuation of sick and wounded down the line of communication, and to distribute them generally along the line. They have command over all medical personnel who come within the sphere of their duties, and have the disciplinary powers of a battalion commander. The *Etappenarzt* also appoints one of his clearing hospital directors to control the work of the advanced depôt of medical and surgical stores. A voluntary aid delegate is attached to the staff of each clearing hospital director.

As already noted, the administration of the medical service in the zone of the home territory is under the medical department of the War Office. It is carried on as in peace, except that the work of the four medical

inspectorates cease. A deputy principal medical officer takes over duty at each army corps headquarters, and technical experts, such as consulting surgeons, are appointed to do duty under him in the district. He may appoint a senior army medical officer to act as director of reserve hospitals when several of these are opened in any one locality.

In the fortresses the administrative medical officer is called the *Garnisonsarzt*, and the general sanitary condition of the fortress is supervised under him by a sanitary committee, with an army medical officer as president.

THE MEDICAL UNITS WITH THE FIELD ARMY.

The Regimental Medical Service.

(Truppsanitätsdienst.)

The medical personnel and equipment with the various regimental units of the German Army are shown in Appendix II. There are 2 medical officers, 4 men of the medical service and 16 stretcher bearers to each infantry battalion or similar unit. The medical personnel is in similar proportion for other units, but none except infantry battalions have a definite establishment of stretcher bearers. The equipment varies considerably according to the nature of the unit. Cavalry units, for example, have a folding or emergency stretcher that can be carried on the saddle. Each infantry battalion has a 2-horsed medical wagon, while the cavalry regiments have a pack horse with a pair of panniers and a special 2-horsed medical wagon, a 6-horsed wagon with medical and surgical supplies being attached to the cavalry division for replenishing the regimental equipment. These and other points of difference in equipment are noted later on.

The duties assigned to the medical service with units are various and differ in several respects from the duties carried out by the corresponding service with British troops, chiefly because of the more extensive organization of a regimental medical service both in peace and in war in the German Army.

When the field units are stationary for a more or less prolonged period a local hospital and local sick room are established by the regimental medical service and worked under the same regulations as the regimental sick room or local hospital in peace. Suitable buildings are taken up for the purpose, especially buildings used as hospitals or infirmaries. The divisional staff appoints the personnel to do duty in these, either from regimental or medical units.

During the march of large bodies of troops arrangements are made by divisional or army corps commanders, on the recommendation of their principal medical officers, to establish posts along the route for the collection of men falling out (*Krankensammelpunkte*); and a proportion of the regimental medical personnel and equipment is assigned to these posts. Men going sick on the march will be taken on to the next post or sent back to the last. These posts are intended for the purpose of receiving and sending back to the nearest line of communication posts any sick that have to be left behind. As a rule, each post requires to be opened for a few hours only; and the personnel and equipment then rejoin their unit.

When smaller bodies of troops are on the march the arrangements are to distribute some of the ambulance wagons of the field medical units amongst the troops, so that slight cases likely to be fit for duty in a short time can be taken on with their units. Slight cases, for whom there is no transport, are handed over to lines of communication authorities and severe cases are

sent to the nearest military or civil hospital. Ambulance wagons distributed amongst troops on the march must invariably be returned to the medical units whenever the troops come in touch with the enemy.

During an action the medical service of infantry units acts differently from that of cavalry units. In the infantry, each battalion may open a battalion dressing station, but it is considered better to avoid opening many such stations and to concentrate the work, with a portion of the medical personnel and equipment, into one regimental dressing station for the three battalions under the direction of the senior medical officer of the regiment, who arranges with the regimental commander for the issue of the necessary orders and for keeping the principal medical officer of the division informed as to the establishment and position of the dressing station. The battalion stretcher bearers are collected in rear of the battalion, where the medical wagon is found. They leave their packs at the regimental dressing station, and, carrying stretchers and surgical haversacks, proceed to collect the wounded. Unlike the regimental stretcher bearers of most other armies they wear the Red Cross brassard. This innovation has been introduced because the regimental stretcher bearers are no longer drawn from the combatant ranks but are borne on the strength of the regiment as non-combatants, solely for the purpose of acting as stretcher bearers. Auxiliary stretcher bearers, such as the bandsmen of infantry, foot artillery, engineers and transport units, are also employed as regimental stretcher bearers, but wear a red sleeve band instead of the Red Cross brassard.

Whenever the field medical units come into action the personnel and equipment of the regimental dressing stations are attached to the main dressing station of

the bearer battalion, and regimental and auxiliary stretcher bearers may then be employed in carrying wounded to the latter and, if necessary, to the field hospitals. This manner of employing regimental medical personnel with field medical units is not, as a rule, provided for in the regulations of other armies.

Wounded must not be kept longer than is absolutely necessary in the regimental dressing stations. If they are able to walk they leave their ammunition, all but a few cartridges, at the dressing station and, under the senior man of the party, march to a collecting station for slightly wounded or go direct to a line of communication medical unit. Country carts and empty supply wagons are to be employed as far as possible to convey those who are unable to walk to the field hospitals, where they go direct and not through the main dressing station of the bearer battalion. This emphasises the position of the regimental dressing station as a dressing station, which is to be opened temporarily to take the place of a main dressing station during the interval that must elapse between the commencement of an action and the time when the bearer company comes up and commences to work on the field of battle. If it is necessary to leave wounded at the regimental dressing station, some of the regimental medical personnel must be left with them and shelter provided. When the regiment advances all equipment and personnel which can be spared from the dressing station must go on with it, and, when the dressing station is finally closed, a short note must be sent to the divisional principal medical officer, telling him of the number of the wounded and nature of their wounds, and how they were disposed of. After an action it is the duty of the regimental unit to search the area occupied by it for wounded, protect them from plunder, and bury the dead.

The medical service with a cavalry division works under different rules and organization, forming what may be considered a combination of a regimental medical service and a cavalry ambulance. When contact with the enemy is anticipated, a dressing station for the whole division, or, as it is called, a *Sanitätsstaffel*, or medical echelon, is formed of two-thirds of the regimental medical personnel and of the cavalry medical wagons under orders issued by the principal medical officer through the division commander. The remainder of the personnel and equipment, including the pack animals, remain with their regimental units and are only to be attached to the *Sanitätsstaffel* under exceptional circumstances. The general direction of this dressing station comes under the divisional principal medical officer, who arranges for bringing the wounded to it and passing them on from it to field hospitals, &c. For stretcher bearer work two courses are open; either auxiliary stretcher bearers may be attached to the units in order to bring men into the *Staffel*, or men who have lost their horses and are thus unable to keep up with their unit may be attached to the *Staffel* and employed as stretcher bearers.

Wounded able to walk are collected in groups at the *Staffel* and sent on under the senior man of the group to a collecting station for slightly wounded; others are sent to the nearest field hospital, and, when all have been provided for, the *Staffel* is closed and follows its division.

The Army Medical Battalion.

(Sanitätsbataillon.)

The exact significance of the unit known as the *Sanitätsbataillon* is difficult to grasp, as it is a unit that

has no counterpart in other armies. Taken as a whole, it is simply a unit that places under one command all the mobile medical units of an army corps, although these units may be widely apart in point of space and may be engaged in carrying out different and distinct duties in different parts of the field. Each army corps has one *Sanitätsbataillon*, which for a better title must be translated "army medical battalion." It consists of a staff, 3 bearer companies and 12 field hospitals.

(a) *The Army Medical Battalion Staff.*

(*Stab des Sanitätsbataillon.*)

The staff is formed of a battalion commander, an adjutant, who is a subaltern, and non-commissioned officers and men. It is entirely a staff of combatant and not of medical officers, and it governs the movements of bearer companies and field hospitals. The bearer companies are attached to divisions but the field hospitals remain under the direct control of the general officer commanding the army corps, although one or more may be attached according to circumstances to a division. Bearer companies and field hospitals may also be given to troops acting independently of their army corps. Orders are issued to the battalion by the general officer commanding the army corps, or, in cases of emergency, by the principal medical officer of an army corps or division. The commander of the battalion administers discipline within the battalion and gives effect to the army corps or divisional orders. But he has no power to interfere in any way with purely army medical service matters within his command. The situation is in fact somewhat anomalous, and is distinctly one of divided responsibility.

(b) *The Bearer Company.**(Sanitätskompagnie.)*

The bearer company represents the combatant as distinct from the medical section of the *Sanitätsbataillon*, just as the field hospital represents the medical as distinct from the combatant section. Yet to each bearer company a special medical section, in intention a dressing station party, is attached, which is not subordinate to or under the command of the officer commanding the company. Here again the anomaly of divided responsibility in a field medical unit is apparent. The composition of the bearer company is 2 bearer sections and 1 medical or dressing station section. The bearer sections are organized as a company unit of the battalion, with a military commandant, 2 subalterns, a paymaster (quartermaster), sergeant-major, quartermaster-sergeant, 4 sergeants, 14 corporals, 16 lance-corporals and 208 stretcher bearers, amongst whom are included 2 buglers, 1 tailor, 3 shoemakers, 2 shoeing smiths, 1 wheelwright and 1 cyclist. There are also an *Oberarzt* as company medical officer and an apothecary as compounder, together with 2 sergeants, 7 corporals and 8 sick attendants of the medical corps, and 1 sergeant, 2 corporals, 3 lance-corporals and 28 men of the transport corps. The dressing station section consists of 1 *Oberstabsarzt* (who is the senior medical officer of the company), 2 *Stabsärzte* and 5 subaltern medical officers. The non-commissioned officers of the medical corps and sick attendants belonging to the bearer sections are placed at their disposal whenever the dressing station is to be established; they are only retained on the establishment of the bearer sections in order to place them under the command of

the officer commanding the company. The senior medical officer has disciplinary power, namely that of a company officer, over the medical officers only of the dressing station section, just as the company commander has over the rest of the personnel. The transport of a bearer company consists of eight 2-horsed ambulance wagons, each with 7 or 9 stretchers and surgical haversacks, two 2-horsed medical and surgical store wagons, two wagons for stores, each carrying an operation tent, and one 2-horsed supply wagon, in addition to twenty-one riding horses.

The manner of employing a bearer company in action is as follows :—

The principal medical officer of the division selects the locality for opening a dressing station and the orders for this purpose are issued by the general officer commanding the division. As a rule this is not done until the place where the largest number of wounded is likely to occur is determined by the general development of the action. The commander of the bearer company appointed to work with the division then leaves the medical personnel and equipment at the dressing station to assist the dressing station section, and proceeds with his subalterns and stretcher bearers to bring in wounded and get into touch with the regimental dressing station.

The dressing station of the bearer company is called the *Hauptverbandplatz*, or main dressing station, as distinct from the *Truppenverbandplatz*, or regimental dressing station. It may be reinforced by personnel from the latter, but its personnel must not be used to reinforce the regimental dressing stations. That must be done, if necessary, from personnel of field hospitals, a regulation which has no equivalent in other armies and which is intended to maintain the integrity of the main dressing station, and to provide for a re-

inforcement of those units that are likely to be engaged only during the actual fighting from medical units that may not be opened until the action is over.

A main dressing station opens in thirteen sections, namely:—(1) A place where the packs of the stretcher bearers are left, with a bugler in charge ; (2) a place for the loading and unloading of ambulance wagons ; (3) a place for the packs of wounded, under a non-commissioned officer ; (4) a place for the reception of wounded, under a medical officer ; (5) a place for applying dressings, under a medical officer ; (6) a resting place for wounded able to walk, under the senior officer or man amongst them ; (7) a resting place for wounded able to be moved, under a non-commissioned officer ; (8) a resting place for wounded unable to be moved ; (9) a place for men who are moribund, under a non-commissioned officer ; (10) a mortuary ; (11) a kitchen ; (12) a wagon park, including place for preparing improvised means of carrying wounded ; and (13) latrines.

The nature of the duties in these sections is explained by their designation, the medical officers being employed chiefly in the reception and the dressing sections. At the former the wounded are classified into three categories : “able to walk,” “able to be moved,” “unfit for transport.” The first go to the resting place for those able to walk and from there are marched off in parties to a collecting station for slightly wounded (*Leichtverwundetensammelplatz*), opened further to the rear, or to a line of communication hospital. Men in the second class are sent in ambulance wagons to field hospitals, and men in the last are kept until the dressing station is relieved by the arrival of a field hospital or until the wounded can be moved by suitable hand carriage. Diagnosis tallies are affixed indicating the different categories ;

namely, white for the first, white with a red stripe for the second, and white with two red stripes for the third.*

At the section for dressings, only emergency operations are undertaken, and if a permanent splint is placed on a limb the fact is to be noted on the diagnosis tally.

The paymaster (quartermaster) is responsible for all matters connected with the kitchen section, and with the collection and charge of articles belonging to the wounded, and also with the disposal of the dead and preparation of identification rolls.

When the troops advance the bearer company and dressing station sections also advance, leaving, if necessary, a party behind until all wounded are taken over or evacuated. When troops retire, the company along with all its transport, carrying as many wounded as possible, retire with them ; a portion of the dressing station party being left behind with those that cannot be moved.

When a dressing station closes, the senior medical officer must submit a short report to the principal medical officer of the division telling him of the work done, classifying the wounded received into the station, and stating the nature of any major operations performed. When no active military operations are going on, the personnel of the bearer companies may be employed, under the orders of the general officer commanding, in the work of field hospitals, in evacuating sick or wounded, or in preparing ambulance trains, hospital ships (river boats), &c.

The collecting station for slightly wounded is

* The tally is made with two detachable red edges and a white centre. By detaching one or both of the red stripes, or leaving both red stripes undetached, a tally indicating the different categories is obtained.

formed to prevent field hospitals being clogged by slight cases of injury. It is a link between the dressing stations and the line of communication in such a way as to make it unnecessary for these cases to go to the field hospitals at all. The locality and the personnel to be employed in it are determined by the divisional principal medical officer. As a rule, a collecting station for slightly wounded is placed under the charge of the senior officer or non-commissioned officer amongst the wounded, medical personnel only being required to see that the dressings are properly retained. The movements of the wounded from this station to the line of communication are also determined by the principal medical officer of the division, who is responsible for informing the line of communication authorities in the matter.

(c) *The Field Hospital.*

(*Feldlazarett.*)

The field hospitals are directly under the army corps principal medical officer, who, by orders issued through the general officer commanding, brings them up as required to the neighbourhood of the main dressing stations, and who can employ the personnel of those that are not opened during an action to reinforce regimental dressing stations and to supply the requirements of the slightly wounded collecting stations. A field hospital is divisible into two sections and is normally equipped for 200 patients; but it is intended to expand, according to circumstances, for the reception of a much larger number. It is under the command of a medical officer, an *Oberstabsarzt*, who has the disciplinary power of a company officer over the personnel of the unit and over non-commissioned officers and men under treatment.

The remaining personnel consists of a *Stabsarzt*, 4 subaltern medical officers, an apothecary, 2 hospital quartermasters, 1 provost sergeant, 2 corporals, (1 as clerk), 1 cyclist, 2 privates (1 as cook and 1 as apothecary's assistant), 3 sergeants and 6 corporals of the medical corps, 14 sick attendants, and 1 sergeant, 1 trumpeter, 1 lance-corporal, and 18 men of the transport corps. The transport consists of 1 ambulance wagon with 7 or 9 stretchers and surgical haversacks, 2 medical and surgical store wagons, 1 wagon for stores, 4 hospital equipment wagons, and 1 wagon for officials; together with 9 riding horses.

The medical officer in charge is obliged to keep the army corps or division principal medical officer, the commander of the *Sanitätsbataillon*, and the line of communication authorities informed as to when and where the hospital is opened. He has also to give similar information to the central information bureau of the Prussian War Office, must get in touch with the nearest main dressing station and keep the medical officer in charge of it acquainted from time to time with the amount of the accommodation available in his hospital. In all other respects the functions of the field hospital are similar to those of the field hospitals of other armies, namely those of a mobile medical unit for the temporary care and treatment of wounds and sickness in the field army pending their evacuation to stationary or permanent hospitals.

*The Medical Service of the Reserve Division.**

Each reserve division has one reserve bearer company and four reserve field hospitals, which are placed

* A reserve division is a division which is formed of reservists and which takes the field with the active army.

under the command of the officer commanding the reserve transport battalion. They are formed in the same manner as the bearer companies and field hospitals of the *Sanitätsbataillon*, but do not form a special medical battalion unit as do the bearer companies and field hospitals of an army corps.

The Medical Service in Siege Operations.

In siege operations the senior medical officer takes over the duties of a principal medical officer of an army, and arranges a medical service for the force in accordance with the circumstances of the siege, and out of the available medical personnel and units forming the besieging force.

THE MEDICAL UNITS ON A LINE OF COMMUNICATION.

The Clearing Hospital and the Clearing Hospital Detachment.

(Kriegslazarett, Kriegslazarettabteilung.)

A clearing hospital, literally translated, a "war hospital," is organized for the purpose of taking over those wounded in field hospitals, who are unable to bear transport. In exceptional circumstances a clearing hospital may receive wounded direct from the field. In leaving its wounded with a clearing hospital, a field hospital leaves also the necessary equipment for carrying on treatment, and, before advancing, is itself replenished by equipment drawn from the advanced depôt of medical and surgical stores.

The *Kriegslazarett* does not exist as a definite unit with personnel and equipment of its own, but is formed by the *Kriegslazarettabteilung*. This is a specially

organized clearing hospital personnel or detachment, which takes over the equipment left by the field hospital and obtains subsidiary equipment, as required, either from local resources or from the advanced *depôt* of medical and surgical stores. This detachment consists of 4 *Oberstabsärzte*, 6 *Stabsärzte*, 9 subaltern medical officers, 1 dentist, 3 apothecary officials, 6 quartermaster officials, 3 military clerks, 3 cooks, 9 sergeants of the medical corps as wardmasters, 18 corporals of the medical corps, 36 sick attendants, and 26 men of the transport corps. Its only special equipment is a dentistry case. The personnel is obtained partly from the active list or reserve, and partly from civil and voluntary aid sources. The senior *Oberstabsarzt* is in command.

Clearing hospital detachments, composed as above, are mobilized in the proportion of one for each army corps. They are placed under the *Etappenarzt* of the army, to which their army corps belongs, and he orders them forward as required, to set free the personnel of those field hospitals that are to be converted into *Kriegslazarett*. The process of thus converting field hospitals into clearing hospitals is carried out under the direction of a director of clearing hospitals (*Kriegslazarettedirektor*), whose functions have already been described.

The link thus formed between the mobile field army and the lines of communication is an important link and its nature and functions are worth studying. It is somewhat different from the *Hôpital d'évacuation* of the French Army, and from the clearing hospital of the British army. It is of the nature of a large detachment of mobile personnel without a fixed equipment, ready to undertake the establishment of a hospital out of local or other resources at any locality and at any moment. It has its equivalent in the

reserve medical personnel unit of the Japanese Army, although the latter has a definite medical and surgical equipment of its own.

Line of Communication Hospitals.

(Etappenlazarett.)

In each post on the lines of communication the post commander is obliged to make arrangements for the reception and care of sick. As a rule this is done by employing local civil practitioners; but at the head of the line and at such other posts as may be considered necessary line of communication hospitals are opened. They correspond with the British stationary hospitals, and are intended primarily for the reception and treatment of the sick of line of communication troops or of troops passing through the zone; but one of their special functions is to be prepared to receive large numbers of wounded after great battles. No definite scale of personnel or equipment is laid down for these hospitals. The command of the hospital must always be given to a medical officer of the active or retired list. Failing such, the control of the hospital is placed under a hospital committee, *Lazarettkommission* as it is called, consisting of a combatant officer and a civil surgeon. Other medical officers are obtained from amongst the post or local civil practitioners and the subordinate personnel from a hospital section of the voluntary aid societies or from other civil sources. The equipment is obtained from the medical and surgical stores dépôt or from local resources.

Connected with the *Etappenlazarette*, and, as a rule, forming sections of them, are the hospitals for slight cases of sickness or wounds (*Leichtkrankenabteilung*), the convalescent dépôts (*Genesungsabteilung*), and

the hospitals for infectious diseases (*Seuchenlazarett*). The function of a section for slight cases corresponds with that of the regimental sick room in peace. When the number of cases likely to accumulate in it is large or its position one of importance the general officer commanding the line may make it independent of the *Etappenlazarett* and place it under a senior medical officer with subordinate personnel obtained from local and voluntary aid sources or from the clearing hospital detachment. The convalescent depôts are intended for men who have recovered but cannot do full work. They are placed near rear of the field army, and the convalescents are employed in duties corresponding with their strength. They are under the command of a combatant officer. Infectious disease hospitals are managed as sections of the *Etappenlazarette*, but they must be placed away from the line of traffic, and their position must be clearly marked and made known to the troops.

The Sick and Wounded Transport Detachment.

(*Krankentransportabteilung.*)

A definite medical unit, composed of 1 *Oberstabsarzt*, 2 *Stabsärzte*, 4 subaltern medical officers, 1 quartermaster, 1 provost-sergeant, 2 sergeants and 4 corporals of the medical corps, 8 sick attendants and 8 soldiers of the transport corps, with such equipment as can be obtained locally or from the medical and surgical store depôt, is mobilized as a sick and wounded transport detachment for the line of communication of each army. The *Oberstabsarzt* is in command and has the disciplinary power of a company officer. The detachment is divisible into three sections.

The usual position of the detachment is at the head of the line ; but a place should be selected where there is ample accommodation for the temporary reception

of large numbers of sick and wounded from the field army. When the wounded after a battle are diverted to some other point than the normal head of the line of communication, or to a place where there is railway or water transport, the detachment or a section of it proceeds thither without waiting for orders. Its function is to open a dressing and refreshment station (*Verband- und Erfrischungsstelle*), where the wounded may be received temporarily and classified, and also a collecting station (*Krankensammelstelle*),* where those capable of being evacuated down the line without delay may have temporary shelter until the hospital trains or other means of evacuation are ready to start. Those who are unable to move down the line are sent to the nearest hospital. Personnel of the voluntary aid societies may be employed in the dressing, refreshment and collecting stations should the organised personnel of the detachment be insufficient. For transport of wounded to the nearest hospitals or to the collecting stations at railway or river posts, the field hospital ambulance wagons, empty general service wagons, country carts, automobiles, light field railways, &c., are used by this unit. The unit is the complement of the clearing hospital detachment. While the latter is concerned with the care and treatment of sick and wounded until they are sent to permanent hospitals, the former is concerned with the arrangements for their transport to permanent hospitals and with their comfort during the journey.

Transport of Sick and Wounded by Railway.

Railway trains carrying sick and wounded are of three kinds :—

- (1) *Ambulance trains*, regularly organized as such in

* The term "*Stelle*" is used to designate posts on the lines of communication, just as "*Platz*" is used to designate those in the zone of the field army.

time of peace and with a definite personnel. They are called *Lazarettzüge*. They are under the command of an *Oberstabsarzt*, who has disciplinary power of a company officer over all except sick or wounded officers in the train. He must be on the active list or restored to it if retired. The train is composed of twenty-four ambulance cars, each carrying twelve lying-down patients, one officers' ambulance car for eight lying down, a car each for the senior medical officer and for the other medical officers, two cars each for the subordinate personnel, for kitchen, and for equipment, three cars for boilers and heating apparatus, one car each for office and dispensary, for stores, and for baggage. The ambulance cars are converted 4th class passenger cars.

(2) *Auxiliary ambulance trains*, called *Hilfslazarettzüge*. These are made up of cars that are being returned down the line. They are fitted out as ambulance trains by the sick and wounded transport detachment, with special equipment kept for the purpose in the advanced depôt of medical and surgical stores. The personnel is not a definite personnel as in the case of the regular ambulance train, but, as a rule, there are for every 100 patients 1 or 2 surgeons, 2 corporals of the medical corps and 10 or 12 sick attendants, obtained from the sick and wounded transport detachment. The trains must not contain more than 40 cars, and must not be run with cars other than those used for sick and wounded, in order to avoid conflict with the Geneva Convention.

(3) Ordinary trains carrying sick sitting up, called *Krankenzüge*. These are made up of ordinary railway cars without any special arrangement or equipment; and, as a rule, consist of passenger cars only. Medical officers do not accompany these trains, but they supervise the loading and unloading of them. Attendance

on patients during the journey is undertaken by voluntary aid convoy personnel. The trains may be made up entirely of cars carrying patients or they may be mixed. In the former case they are accompanied by a military escort of 1 non-commissioned officer as conductor, 2 military police and 1 private soldier to each car. Refreshment stations are provided along the line of railway for feeding the patients in these trains. The trains do not run during the night, and a halt is then made at places where the patients can be housed.

Transport of Sick and Wounded by Water.

As in the case of railway trains there are three classes of hospital ships, namely the definitely organized units *Lazarettsschiffe* or hospital ships proper, the *Hilfs-lazarettsschiffe* or auxiliary hospital ships, and the *Krankenschiffe* or ships carrying sick and wounded but without any special fittings or equipment.

On lakes and rivers a number of boats or barges, pulled by a tug, may be formed into hospital ship trains, auxiliary hospital ship trains,* and trains of ordinary boats carrying sick. They are called respectively: *Lazarett*-, *Hilfs-lazarett*- and *Krankenschiffszüge*. Cases of infectious disease may not be carried by water.

The senior medical officer commands hospital ships or hospital ship trains.

Medical and Surgical Store Depôts.

There are two classes of medical and surgical store depôts in the field; the *Etappensanitätsdepôt* and the *Sanitätsabteilung* of the general store at the base.

* It should be noted that the term "ship," as used above, refers as much to vessels on the rivers or lakes as to those on the high seas.

The *Etappensanitätsdepôt* corresponds with the British advanced depôt of medical stores. One such depôt is mobilized for each army. It has a large and varied personnel and equipment. A combatant subaltern officer is in command, and he has one other subaltern officer with him. There is no medical officer but there are 6 apothecary officials, 3 quartermasters and 6 surgical instrument makers amongst its personnel. The depôt has its own transport, consisting of twenty-four 2-horsed equipment wagons, a 4-horsed Röntgen ray wagon for each army corps and a 2-horsed water sterilizer wagon for each army corps.

The function of this depôt is not only to replenish the medical and surgical equipment of the regimental medical service and field medical units but also to keep ready material for fitting out auxiliary hospital trains and ships, light field railway cars and country carts.*

The addition of Roentgen-ray wagons and water sterilizers to the equipment of the depôt is new and noteworthy. They are kept there for use as required in the field, the water sterilizers being sent to areas where the water supply is suspicious and where water-borne disease is prevalent.

A supply of hospital tents is also maintained at the depôt for use as required in the zones of the field army or line of communication.

The depôt is divisible into three sections. Its transport column belongs to the transport of the line of communication.

The *Etappensanitätsdepot* is replenished from a medical and surgical section of the general stores at the base of the line of communication of each army, which is called the *Sanitätsabteilung* of the *Güterdepot* of

* This function is carried out in France by the clearing hospital (*Hôpital d'Évacuation*). See Part I., p. 66.

the *Sammelstation*. It is under the charge of an apothecary with 2 quartermasters, 4 sergeants of the medical corps, 10 corporals and 3 men of the transport corps. Amongst the equipment kept in this depôt are folding cots and portable hospital huts.

Voluntary Aid Units.

The voluntary aid units in the line of communication zone are described in the next chapter.

THE MEDICAL UNITS IN THE HOME TERRITORY.

Reserve Hospitals.

The medical units in the home territory are organized as in time of peace. All the garrison hospitals throughout the country become in time of war *reserve hospitals*; and the number of such reserve hospitals may be increased by converting barracks and public buildings into branch hospitals, or by erecting new tent or hut hospitals. The command of these hospitals must be held by a regular army medical officer. Failing him a hospital committee composed of a combatant officer and a civil surgeon takes charge of the reserve hospital. Should a number of reserve hospitals be opened in the same locality they may all be placed under the charge of one medical officer, who is called the *Reserve-lazarett-director*. Eminent physicians and surgeons and other experts of renown are employed in these reserve hospitals, which correspond very much to base or general hospitals of the British army. Equipment is maintained in mobilization stores for the conversion of buildings into reserve hospitals, so that a portion at any rate of the accommodation may be ready for hospital work on the tenth day of mobilization.

Fortress Hospitals.

In fortresses the garrison hospitals become fortress hospitals (*Festungslazarette*), and are organized and administered in the same way as the reserve hospitals.

Central Information Bureau.

A central information bureau (*Zentralnachweisebureau*) is opened at the War Office in Berlin for giving information to relatives regarding sick and wounded. It has a large staff under an officer of regimental commander's rank, as head of the bureau or *Abteilungschef*. He is assisted by 4 other combatant officers, 3 medical officers, 37 secretaries, 1 jurist, 5 registrars, 135 corporals (including 2 of the medical corps) as clerks, along with 2 members of voluntary aid societies. The staff may be increased as required.

Voluntary Aid Units in the Home Territory.

The work of the voluntary societies in the zone of the home territory is detailed in the next chapter.

FIELD MEDICAL EQUIPMENT.

The field medical equipment of the German army has some special features that are worthy of notice. Full details are to be found in the volume of appendices to the Field Medical Regulations, a volume of considerable size. It contains 403 pages, with one diagrammatic plan of the field organization and eight drawings of tents, huts, and ambulance train cars. The *Krankenträgerordnung*, or manual for stretcher bearers, also contains useful details in the form of drawings and descriptions of improvised and other methods of

fitting out vehicles of all kinds for the carriage of sick and wounded, as well as other instructive matter.

Surgical Dressings and Instruments.

The first field dressing measures 3 inches by $1\frac{3}{4}$ inches by $\frac{3}{4}$ inch, and consists of a sublimate gauze bandage $4\frac{1}{2}$ yards long and $2\frac{3}{4}$ inches wide, with a three-fold sublimate gauze compress, coloured pink, stitched on at a distance of 10 inches from one end. The dressing is contained in a waterproof linen cover, and is sterilized by steam. The object of this form of dressing is to enable the compress to be applied without its being touched by the fingers. The bandage has points marked on either side of the compress and at some distance from it to indicate where it is to be held in applying the dressing. Each officer or man carries two first field dressings in a pocket in the inside lining of the left front flap of the tunic.

The material for dressings, carried with regimental and field medical units, is made up in compressed packages and consists of sublimate gauze and sterilized bandages, dressings, and absorbent wool. Iodoform gauze is also carried, but, in other respects, the material is of a simple and uniform character. It is sterilized, impregnated with the antiseptic, and compressed by the army officials of the apothecary class.

Cases of surgical instruments in use in the field are of five different descriptions. Each medical officer has a surgeon's pocket case, but he may carry it in any way he likes, and, so long as it contains the prescribed instruments, the case may be in any form he likes. Each regimental unit has a special and large case of instruments, weighing about 40 lbs. Cavalry units have, however, a smaller and lighter case, weighing about 22 lbs. For medical units there

is a case, called the principal (*haupt*) case of instruments. It is somewhat larger than that of regimental units, but its weight is, if anything, less. Finally, there is a mixed case of instruments for special work, such as eye and ear operations, craniotomy, laparotomy, tracheotomy, &c. It weighs about 18 lbs., and is part of the equipment of medical units. There is also a case of post-mortem instruments for medical units.

The field sterilizer consists of steam boiler, with instrument tray and cylinder for dressings. It can be used with all kinds of fuel, wood, coal, methyated spirit, or gas. It weighs about 42 lbs. Each medical unit is provided with one.

Equipment of the Regimental Medical Service.

The men of the medical corps with regimental units carry a one litre capacity water bottle and a drinking cup. Both are made of aluminium. Each man of the medical corps also carries a leather pouch containing scissors, dissecting forceps, spatula, thermometer, and nail brush. In addition, each man of the medical corps with regimental units and every second man of the medical corps with field hospitals and bearer companies carry on the waist-belt a pair of leather pouches, weighing when full $2\frac{1}{4}$ lbs. each, and measuring about 7 inches by $2\frac{3}{4}$ inches by 4 inches. These pouches contain medicines and dressings for first aid to sick and wounded. Similar pouches, filled with dressing material only, are carried by the stretcher-bearers of regimental units.

Mounted men of the medical corps, as, for example, those attached to cavalry, horse artillery and machine gun batteries, carry, instead of the pair of pouches on the belt, a single pouch strapped to the off-side of the saddle. It weighs about 5 lbs. and

contains the same material as the pair of pouches. A stretcher sling is also carried over the shoulder under the tunic. This cavalry pouch, filled with dressing material only, is also carried by the mounted guides of the medical pack horse with cavalry regiments.

The special medical and surgical equipment of regimental units consists of the medical and surgical knapsack, medical and surgical panniers for pack transport, and medical and surgical boxes. The knapsack weighs, when full, about 25 lbs., and contains a supply of dressings and drugs for first aid. It is used in the same way as the British Medical Companion. The panniers consist of two panniers, weighing each, when full, about 50 lbs. They are supplied for cavalry regiments only and are carried by the medical pack horse one on either side of the pack saddle, with the addition of a leather roll weighing about 5 lbs. carried on the saddle between the panniers. The medical and surgical boxes are carried in the medical wagons of infantry and other units and weigh about 110 lbs.

Stretchers.

Several forms of stretchers are used. The simplest is known as the "straw mattress" stretcher. The field hospitals are equipped with sacks which are intended to be filled with straw and thus converted into mattresses; but these sacks have also canvas hoops attached to them along the sides, so that they may be used as stretchers by inserting side poles through the loops. Five of these sacks are carried in each of the two medical wagons of a bearer company and a supply of stretcher poles is carried in the supply wagon.

Mounted units carry an emergency or improvised

stretcher consisting of a piece of brown canvas, about 6 feet long by 2 feet 2 inches wide, with two metal traverses constructed with rings at either end, into which stretcher or other poles can be placed. The canvas and traverses are rolled up together; one is carried on the top of each pannier and twelve in the 6-horsed medical equipment wagon of a cavalry division.

The regulation folding stretcher weighs about 40 lbs., is about $6\frac{1}{4}$ feet long and 2 feet wide, with poles about 8 feet long. The traverses are of wood, and the legs are triangles of iron fixed to the poles. A pillow is fixed to the head of each stretcher.

Different forms of stretchers, more of the nature of cots, are used in the ambulance wagons. They vary according to the pattern of wagon, and they can be widened by the addition of a side piece.

The stretchers used in hospital trains are also of a special construction and of the nature of cots, capable of being widened and lengthened by side and foot boards.

A regulation wheeled litter also forms part of the equipment for transport of sick and wounded.

The number of regulation folding stretchers is 56 to 72 with each bearer company, 7 to 9 with each field hospital and 1,056 in each advanced depôt of medical stores. The last are kept for the purpose of fitting out auxiliary or improvised hospital trains as well as for replenishing the bearer companies.

The wheeled litters are also kept in the advanced depôt of medical stores, 57 being held on charge in each depôt.

Each stretcher of the bearer company and field hospital and 249 of those on charge in the advanced depôt have a surgical haversack for dressings attached.

Transport Material for Medical Services.

The special field transport material of the medical service consists of pack animals for cavalry regiments, medical wagons for infantry units, medical wagons for cavalry divisions, medical equipment wagon for cavalry divisions, medical wagons for bearer companies and field hospitals, wagons for stores of bearer companies and field hospitals, food supply wagons for bearer companies, equipment wagon for field hospitals, officials' wagon for field hospitals, ambulance wagons for bearer companies and field hospitals, and stores wagons, field Roentgen-ray wagons and wheeled water-sterilizer wagons for the advanced dépôt of medical stores. All these are inalienable transport of the units named and, with the exception of the food supply wagons of the bearer companies, are distinguished by flying the Geneva Cross flag.

The infantry medical wagon is of two patterns. It is constructed with drawers and compartments, and carries, in addition to the medical officers' baggage, lantern and ropes, 4 or 5 field stretchers and slings, 2 medical knapsacks, 12 blankets, a box of veterinary supplies, surgical instrument case, box of tools, water barrel, hatchet, pickaxe and 2 spades, and the battalion boxes of medical and surgical equipment. Two boards can be drawn out at the tail end to form a table.

The cavalry medical wagon is of entirely different construction. as it carries not only medical and surgical equipment for the cavalry division dressing station, but is also arranged to carry 2 patients lying down on stretchers and 2 wounded sitting up. Dressing material, drugs, and articles of medical and surgical equipment are carried in 4 wooden boxes and 1 drawer beneath the floor of the wagon; ten wax torches,

lantern, rope, hatchet, pickaxe and spade are also carried in the cavalry medical wagon.

The 6-horsed medical equipment wagon of a cavalry division belongs to the second line of transport, and is intended to carry stores for replenishing the cavalry medical and surgical panniers, which are carried on pack animals, and the material in the cavalry medical wagons. It contains, amongst other articles, 8 chests with stores for replenishing the medical wagon, 9 wooden boxes (containing dressing material, drugs, eye, ear, tooth, nasal and craniotomy instruments, 18 torches, tent and ward utensils), a field steriliser, box of tools, 12 cavalry emergency stretchers, cooking utensils, 32 torches, and tent ropes, pegs, &c., for two ward tents.

The medical wagons of the bearer companies and field hospitals resemble one another in construction but differ in the methods of loading and in the material carried. The bearer company wagons contain the necessary medical and surgical stores for forming a main dressing station, and include surgical instruments, sterilizers, operation tables and operators' aprons, &c., dispensary equipment, lighting, kitchen and ward utensils, with 5 blankets, 5 mattress cases and 5 pillow cases. The field hospital medical wagons contain a larger supply and greater variety of drugs and apothecary's requisites than those of the bearer company.

The wagons for stores of the bearer companies and field hospitals are also loaded differently. The bearer company wagons carry each a dressing station tent, distinguishing flags and indicators, officers' boxes, cooking utensils, ward utensils, clothing (including 10 abdominal belts in each wagon and cotton coats for the sick attendants), some medical comforts, 20 torches, plaster of Paris boxes, and the stationery and office

safe, together with various other articles and tools. The field hospital stores wagons are of three patterns and carry hospital clothing and bedding, bed urinals and other ward utensils, a considerable quantity of dressing material and splints, stationery, office safe and similar articles.

The bearer company supply wagon carries the food supplies for the company, together with groceries and butcher's and cooking equipment.

The field hospital equipment wagons are of two patterns. The old pattern, for 4 horses, is similar in construction to the medical wagon of the field hospital; the new pattern, a 2-horsed wagon, resembles the wagon for stores. They contain cooking utensils, ward utensils, hospital bedding and clothing, a large quantity of medical comforts and a small water analysis case, together with wagon equipment and tools.

The field hospital wagon for officials is intended for the conveyance of the apothecary, the two hospital quartermasters and their baggage.

The ambulance wagons of the bearer companies and field hospitals are of four different patterns or marks. They are 2-horsed wagons, the two older patterns carrying 2 patients lying down and the two newer patterns 4 patients in two tiers, or 2 lying down and 4 sitting up, or 8 sitting up and none lying down. They have also space for carrying the knapsacks and accoutrements of 4 or 6 wounded, and poles, ropes, &c., for improvising an operation or dressing tent.

The stores wagons of the advanced depôt of medical and surgical stores resemble those of the bearer company and field hospitals, and carry the articles required to replenish the field units and to form clearing hospitals, &c.

The Roentgen-ray wagon and the field water sterilizer wagon are recent additions to the field medical equip-

ment of the German Army. The Roentgen-ray wagon is drawn by 4 horses and contains a 4 horse-power benzene motor and dynamo, with switch board, commutator, &c.; equipment necessary for obtaining and developing skiagrams, including a table, Crooke's tubes, interrupter, coil, &c.; tools and reserve material. A lance corporal of the medical service and a mechanic occupy seats beside the driver.

The field water sterilizer is of the Hartmann pattern of heat exchange apparatus and delivers 500 litres per hour. A mechanic occupies a seat beside the driver.

Hospital Tents and Huts.

Several patterns of hospital tents or marquees form part of the equipment of the medical service, and the regulations describing them, their component parts, methods of carrying, pitching and striking them are full of detail. There is an operation or dressings tent weighing about 300 lbs. and covering a ground space of about $11\frac{1}{2}$ feet by 24 feet; another pattern weighs about 350 lbs. and covers a space of about 24 feet by 30 feet. The material carried in the ambulance wagons for improvising tents can be so arranged as to shelter from 2 to 25 patients, the tents being made by lacing together the *tentes abris* of the men of the bearer company or wounded.

There are three patterns of ward tent or hospital marquee. The smallest size is shaped like the British field officer's tent, and can accommodate 12 cots. It covers a ground space of about 24 feet by 30 feet and weighs about 900 lbs. It requires one non-commissioned officer and six men to pitch it. The time taken is 1 hour and the space required about 62 feet by 50 feet.

The other two patterns are of a large size and resemble one another in shape. The side pieces have

windows cut in them and are provided with window panes. The ground space covered by the smaller of the two patterns is about 46 feet by 38 feet, and the total weight is nearly 1,600 lbs. It accommodates 16 to 20 cots. To erect it in 1 to $1\frac{1}{3}$ hour one non-commissioned officer and eight men are required. The larger tent covers a ground space of about 45 feet by 52 feet and weighs complete over 2,500 lbs. It can be erected in 30 to 40 minutes by 4 to 6 men. It accommodates 24 cots. These large marquees are intended to be carried on railway trucks or country carts to the place where they are to be erected. A railway truck will take 14 of the former and nine of the latter, while one or two 2-horsed country carts are required for the carriage of one tent.

In addition to tents, the German medical service has definite patterns of hospital huts for use in the field. Improvised or emergency huts are made out of local material. A uniform pattern of hut of more or less permanent construction is described in the regulations and is intended chiefly for use in expanding the reserve hospitals. It is constructed for 30 hospital cots in one ward, with accessory rooms for small kitchen or bath room, attendants' room and ward latrine.

A portable pattern of hut is kept for conveyance by rail to any place, where hospital accommodation has to be provided rapidly. These portable huts are intended either as ward huts or as office huts and are of the well-known Döcker pattern, taking 18 to 20 beds each. One portable hut can be carried, packed in 11 cases, together with several smaller packages, on a single truck. For transport by road four to six country carts are required for each hut. The hut can be erected in 8 to 10 hours by ten unskilled labourers. A box of tools for erecting it forms part of the equipment of each hut.

Special Sanitary Equipment.

Special field equipment for hygienic purposes consists of a large and small chemical analysis case, a bacteriological case, and a portable bacteriological laboratory. The large analysis case is kept at the advanced dépôt of medical and surgical stores. Each bearer company and field hospital is provided with one of the small analysis cases. The bacteriological case is provided for the use of the sanitary officer on the staff of the principal medical officer of an army corps. The portable bacteriological laboratory consists of two specially equipped boxes for carrying out all kinds of scientific investigation into the cause of diseases or epidemics, and is intended for replenishing the bacteriological case and for the use of the consulting sanitary officer on the staff of the principal medical officer of a line of communication. These boxes are kept in the advanced dépôt of medical and surgical stores, until required for use.

Microscopes for the army corps sanitary officers and lines of communication consulting sanitary officers are also kept at the advanced dépôts of medical and surgical stores.

CHAPTER IV.

THE ORGANIZATION AND RESOURCES OF VOLUNTARY AID.

General Regulations.

The regulations for utilizing voluntary aid in war have been frequently revised within the last few years. The latest revision is dated 12th March, 1907, and is entitled "*Dienstvorschrift für die freiwillige Krankenpflege.*"

For military purposes voluntary aid is regarded as including all voluntary arrangements for supplementing the Army Medical Service in war, and all persons who take part in these arrangements. It is specially stipulated that the military authorities do not contemplate accepting such aid in connection with the Army Medical Service in time of peace, except in case of special emergency, and that the aid which will be accepted in war is limited to that organized by: (1) The German Red Cross Territorial Societies; (2) societies associated with them; (3) the St. John, St. George, and Maltese Orders of Knighthood; (4) societies and associations which have received from the War Office a special authority to act in support of the Army Medical Service in war under the German law for protecting the emblem of the Geneva Convention from abuse.

The limitation is made in favour of these bodies because it is understood that they already devote themselves in peace and within the German Empire to the care of the sick and wounded. Under excep-

tional circumstances permission may be given to others to take part in voluntary aid. Application for such permission has to be made through a high official known as the Imperial Commissioner and Military Inspector of Voluntary Aid, and in the event of approval by the War Office, the society or individuals concerned will be attached to one of the recognized Red Cross Territorial Societies, or to one of the Orders of Knighthood, and come under their control. Voluntary aid from foreign countries may be accepted under the same conditions, but its sphere of action will be confined to the home territory. Finally, it is stipulated that voluntary aid will not be permitted to form any independent unit, and its co-operation with the official units will only be permitted in so far as it can be dovetailed into the official organization and placed under official control. Otherwise, the regulations state, it will not further but only hamper the administration of the services in aid of the sick and wounded. It must, therefore, submit itself unconditionally to the orders of the military authority and individual representatives of that authority.

Red Cross Societies form a vast network throughout the German Empire, many of them being specially organized for affording aid during accidents and other public calamities. They are kept in touch with one another by a Central Committee of Red Cross Societies in Berlin. Each state of the German Union has a territorial society, with branch societies in each province and each Government administrative district, while numerous local societies are affiliated to them. These territorial, provincial and other societies are divided into societies of men and societies of women. They organize, in addition to other work, various groups of voluntary aid detachments or *Sanitätskolonnen*, of which there were in 1907 some

1,514 with a membership of 53,000, all of them men not liable to military service, detachments of male sick attendants belonging to an association called the "*Genossenschaft freiwilliger Krankenpfleger im Kriege*," composed mainly of young medical students, and several Samaritan Societies, which organize stations for affording first aid in street accidents.

In supplementing the regular Army Medical Service, voluntary aid will be confined to the following spheres of activity: (a) The nursing of sick and wounded; (b) the transport of sick and wounded; (c) depôt duties, *i.e.*, in stores. All this supplementary help must be given in rear of the field army, either in the home territory or on the lines of communication. The employment of voluntary aid with the field army will only be permitted in special emergencies, and with the approval of the Commander-in-Chief. In such emergencies the voluntary aid personnel must be attached to a bearer company or field hospital belonging to the regular Army Medical Service, and be placed under its commanding officer. The establishment of hospitals of the Red Cross Societies in the zone of operations may be permitted under the special authority of the Inspector-General of the Lines of Communication and Railways, but this permission will only be granted in case of urgent necessity and on the understanding that the hospital will be withdrawn whenever the necessity disappears.

The following is the detailed work which the regulations lay down as forming the general duties of voluntary aid societies: (1) The organization of male and female nurses and cooks for duty in military reserve hospitals, in hospitals on the lines of communication, in clearing hospitals and similar stationary establishments. A proportion of the male nurses must be trained as stretcher bearers and also

in the technical duties of disinfection. (2) Similar organization of male and female nurses for duty in connection with the conveyance of sick and wounded from the lines of communication to the reserve hospitals, and also of stretcher bearers in the same sphere. (3) Appointment of individuals trained in merchants' or forwarding agents' offices, for the management of voluntary aid dépôts. (4) Collecting and forwarding gifts. (5) Supplementing the military reserve hospitals, either by taking over special branches of hospital management, such as the dieting, laundry work, &c., or by supplying certain portions of equipment, such as beds, linen, clothing, kitchen and messing utensils, &c., or by the establishment of special Red Cross Society hospitals, or finally by the reception of convalescents into private nursing homes. (6) Supplying information to relatives regarding the sick and wounded in hospitals, and sharing generally in the duties of the official Central Information Bureau. (7) The establishment of dressing and rest stations at those places along the line of railway where no special provision is made by the regular service. (8) The preparation and equipment of hospital trains out of the Society's own funds and under its own management and direction. This, however, will only be permitted when the military authorities consider it necessary. The conditions laid down with regard to the hospital trains of the regular Army Medical Service and the specifications for their construction will be made applicable to these Red Cross trains. (9) Preparation of plans and equipment for hospital ships, for conveying sick and wounded in ordinary trains and ships, for utilizing automobiles as transport for sick, together with the maintenance of stretchers, wheeled litters, &c.

The work of voluntary aid societies in peace, in

preparing for these duties in time of war, must be especially directed towards ensuring rapid mobilization on the outbreak of war.

The Imperial Commissioner and Military Inspector of Voluntary Aid.

At the head of all voluntary aid there is an Imperial Commissioner with the official title of "Imperial Commissioner and Military Inspector of Voluntary Aid." The appointment is one which is held during peace as well as war. The officer holding it is appointed by the Emperor. He has under him two Assistant Commissioners, who carry on official business when he is prevented from doing so himself. These Assistant Commissioners are also appointed by the Emperor on the proposal of the Imperial Commissioner with the approval of the War Office. All government officials must give the Imperial Commissioner whatever information he may require to enable him to carry on his duties, and he must be granted any assistance which is permissible in accordance with existing orders. His office during peace is in Berlin. During war one of the Assistant Commissioners takes it over from him.

In addition to the help he receives in accordance with the above arrangements, one combatant and one medical officer from the War Office are in constant touch with him, and are appointed with a view to facilitating communications between him and the War Office and supporting him generally in his duties. He is, also, advised by two special committees, viz., (1) a Standing Committee, composed of the Chairman of the Central Committee of German Red Cross Societies, the two Assistant Commissioners, and others. (2) A higher Advisory Board, which is only to be summoned on specially important occasions.

The Imperial Commissioner nominates the members of the Committee and the Advisory Board, and he also acts as convener. The German Red Cross societies and societies associated with them are generally under the direction of the Central Committee of the German Red Cross Societies, which has its seat in Berlin ; while the Orders of Knighthood are under the direction of their respective Councils. But both the Central Red Cross Committee and the Councils of the Orders are subordinate to the Imperial Commissioner on all occasions on which they come into association with the army and official administration.

The Imperial Commissioner supervises during peace the training of the personnel of voluntary aid associations, and the preparations made by them for war. He is obliged to forward to the War Office annually a report upon the state of all personnel and material that come under the heading of voluntary aid ; and the War Office informs him in return what preparations should be made on the part of the voluntary aid associations in the event of mobilization. He distributes the work required by the War Office amongst the recognized Red Cross societies and Orders of Knighthood ; and the War Office has the power to satisfy itself, by inspection, that the preparations which are being made meet its requirements. It is his duty to select and submit to the War Office for approval the names of individuals who are suitable for appointment as voluntary aid delegates in the event of mobilization. The functions of these delegates are detailed in the next sub-section. It is also his duty : (a) To make himself acquainted with the objects and regulations of all associations that may be formed voluntarily for the purpose of supplementing the Army Medical Service in war, his approval being required before such associations can be

included amongst or attached to the Red Cross societies ; (b) to take into consideration the wishes of individual associations regarding the work they are to undertake ; (c) to concentrate as much as possible the work of separate societies and individuals ; (d) to keep the various associations informed of the lines on which they may work to the best advantage.

When war breaks out the Imperial Commissioner hands over his office at Berlin to one of the Assistant Commissioners and joins the Headquarters Staff of the Commander-in-Chief in the field, where he directs voluntary aid in association with the Inspector-General of the Lines of Communication and Railways and the Principal Medical Officer of the Field Force. While occupying this position it is his duty to issue the papers authorising Voluntary Aid Delegates to act, and the Red Cross brassards and identification cards of all individuals connected with voluntary aid. It is enjoined that these badges, namely, the white brassard with the red cross, must be clearly stamped with his stamp, and that the bearers must carry identification cards authorising them to be in possession of the brassard.

Should any persons connected with voluntary aid be called upon to perform duties requiring their presence in districts where the right to travel without restriction has been withdrawn, it is the duty of the Imperial Commissioner to give them written permits, stating their errand and the locality to which they are going. These permits must also be endorsed with the approval of the Commander-in-Chief of the army. They may be issued also by the voluntary aid delegates appointed to the staff of the Inspector-General of Communications.

The Imperial Commissioner must keep himself in close touch with the Assistant Commissioner who

has taken over his office in Berlin. This official is obliged to carry out all the orders and requirements of the Commissioner as regards voluntary aid with the field force. He is in direct communication with the War Office and submits his proposals according to the instructions received from the Imperial Commissioner. He is assisted by a Board consisting of : (1) The President of the Central Committee of the Prussian Red Cross Societies and four to six of its members ; (2) the same number of members belonging to other Red Cross Societies ; (3) representatives of the Orders of Knighthood ; (4) other individuals especially qualified to help him in the despatch of business. The duty of managing the depôt and accounts at Berlin is placed in the hands of the President of the Central Committee of the Prussian Red Cross Societies. But in the event of his being selected for the appointment of Assistant Commissioner, this duty will be handed over to one of the other members of the Central Committee with the approval of the Imperial Commissioner.

Voluntary Aid Delegates.

Voluntary aid delegates are appointed in civil and military districts throughout Germany to enable the Imperial Commissioner or his Assistant to communicate through them with the military and Government officials, and for the purpose of supervising voluntary aid schemes within their districts. They are selected and appointed by the Imperial Commissioner from amongst names proposed by the local Red Cross societies or Orders of Knighthood. Before they can carry on any duties on mobilization the appointments must be sanctioned by the War Office, and only those individuals who have been so proposed, appointed and

sanctioned may assume the title of "Voluntary Aid Delegate." Some slight modification in the manner of appointing delegates is made in connection with Bavaria, but the principle is the same. Each delegate on accepting appointment must be prepared to serve for a fixed period, either with the army in the field or with the home garrison. He must make a declaration of the time he is prepared to serve, and, as a rule, must bind himself for a period of at least three months if he selects employment on the lines of communication, or for the duration of the campaign if he selects service with the home garrison, or if he accepts appointment as delegate with a sick and wounded transport detachment or with a director of clearing hospitals on the lines of communication. The Imperial Commissioner has power to cancel any appointment, and no delegate can resign without his consent. He has also power to grant temporary leave of absence, release from duty before the specified period has expired, or removal on medical or other grounds. He must also arrange for legal compensation where such is involved, and arrange for courses of instruction to delegates in time of peace.*

The office of voluntary aid delegate is honorary, but clerical assistance is given. All delegates who are not entitled to wear a military uniform or field uniform as members of an Order of Knighthood must wear a specified uniform, the details of which are given in one of the appendices of the German regulations. They must wear the Red Cross brassard at all times, and have in their possession the identification card entitling them to wear the brassard, as well as their authority

* The courses of instruction last about one week. Thus, in February, 1908, a course was held in the *Kaiser Wilhelm's Akademie*, which was attended by 100 voluntary aid delegates. It included lectures and practical demonstrations by army medical officers on all matters connected with the organization of voluntary aid and field medical regulations and equipment.

to act as voluntary aid delegates. They are given a service seal or stamp.

The Duties of Voluntary Aid Delegates in Peace.

In peace the Voluntary Aid Delegates are divided into two distinct classes, the so-called territorial delegates and the delegates of army corps districts.

(a) *Territorial Delegates.*—Each province of Prussia and each separate state of the German Union has a territorial delegate during peace. He is the direct channel of communication between the Imperial Commissioner and the voluntary aid societies, &c., in his district. In order to ensure continuity of work the territorial delegates have to organize their own business arrangements themselves, and appoint substitutes to act for them in the case of absence or other circumstances. They are obliged to carry out the orders of the Imperial Commissioner, and remain constantly in touch with the territorial and provincial Red Cross societies, and Orders of Knighthood in their districts. They direct and supervise the work of these so far as preparation for war is concerned, and act as advisers to societies and individuals with regard to the lines on which they should work. In the event of any new society being formed in their districts, they will make themselves acquainted with its aims and objects and take the necessary steps to bring it into association with the general scheme of organization of voluntary aid.

With regard to the general work of preparation for mobilization in their districts, they receive instructions from the Imperial Commissioner and forward to him annually the following documents: (1) A list of individuals who are willing to take up the position of voluntary aid delegate in war. The names of these

are submitted to the delegates by the Red Cross societies in each province or state. Orders of Knighthood submit names to the Imperial Commissioner direct. (2) A general review of the existing state of voluntary aid work in their districts, along with a general plan for the employment of the voluntary aid personnel in war, including doctors, dentists, dispensers, male and female nurses, stretcher bearers, male and female cooks, expert disinfectors, cyclists, mechanics, chauffeurs, accountants, &c. (3) A general review of voluntary aid material, *e.g.*, Red Cross hospitals, huts, tents, stores, disinfecting apparatus and equipment, utensils, linen, &c. (4) Nominal rolls of personnel, who are ready for immediate distribution on the outbreak of hostilities to hospitals, convoy and transport work and dépôts.

(b) *Army Corps District Delegates.*—Army corps districts in Germany may extend over several states or provinces, and at the headquarters of each army corps a voluntary aid delegate is appointed to act as the channel of communication between the territorial delegates and the general officer commanding the army corps. Their chief function, therefore, is to keep themselves at all times in touch with the general and his staff, and to endeavour to carry out the arrangements which the latter may make for the utilisation of voluntary aid within the corps district. It will be their duty to let the territorial delegates concerned know of these arrangements and keep the general commanding the army corps informed as to the manner in which they are being executed. They act, in fact, as intermediaries between the military authorities and voluntary aid, are representatives of both sides, and carry out the commissions of both, assisting the territorial delegates at the same time in the preparations that are required by the War Office in connection with

mobilization. A territorial delegate of a locality which happens to be the headquarters of an army corps may act as an army corps district delegate.

The Duties of Voluntary Aid Delegates in War.

The duties of voluntary aid delegates in war depend upon whether they are employed on the lines of communication or with the army occupying garrisons in the home territory. In either case their work must be carried out in direct association with the administrative officers of the Army Medical Service, with whom rest all decisions on questions concerning the needs of the sick and wounded, and on all technical matters.

(a) *Voluntary Aid Delegates on the Lines of Communication.*—The delegates on the lines of communication of an army in the field are classified as follows:—

(1) One delegate general (*Generaldelegierter*). This delegate is only appointed when the area of operations is very extensive, and when it is impossible for the Imperial Commissioner, in consequence, to exercise full control. The appointment of the delegate general requires Imperial sanction. He acts as the representative of the Imperial Commissioner in the particular area to which he is appointed.

(2) A delegate for the line of communication of each army (*Etappendelegierter*). He is placed under the inspector of the line of communication, makes his arrangements in association with the principal medical officer of the line of communication, and only comes directly in touch with the principal medical officer of the army when under exceptional circumstances voluntary aid is employed in the first line.

(3) A delegate with each director of clearing hospitals (*Delegierter bei dem Kriegslazarett-direktor*).

He exercises control over voluntary aid work in clearing hospitals, and is immediately under the delegate for the line of communication. His work is carried out with the sanction and approval of the director of clearing hospitals.

(4) A delegate with each sick and wounded transport detachment (*Delegierter bei der Kranken-transportabteilung*). He controls all voluntary aid work in connection with the distribution and evacuation of sick and wounded under the delegate of the line of communication.

(5) An assistant delegate (*Unter-delegierter*), as assistant to each line of communication delegate. He has responsible control of the voluntary aid depôt at the headquarters of the line of communication.

(6) An assistant delegate (*Unter-delegierter*) at each base, as manager of the voluntary aid depôts. The duty of this delegate is to manage all business matters and accounts connected with voluntary gifts, so far as these are non-official. He acts under the delegate of the line of communication, and co-operates with him in forwarding the personnel and material of voluntary aid associations within the limits assigned to him by the railway authorities. So far as his connection with military authorities is concerned, both he himself and the personnel of the depôt which he manages are subject to the orders of the commandant of the railway station where the depôt is placed, in accordance with general military arrangements.

(b) *Voluntary Aid Delegates in the Home Territory.*

(1) The territorial delegates retain their posts and sphere of work as in time of peace.

(2) The army corps district delegates also retain their posts with the general officer who takes the place of the general officer commanding the army corps at the head-

quarters of the district, and carry on the same functions as in time of peace.

(3) A fortress delegate is attached, as required, to the governors of fortified places. His work is regulated by instructions received from the governors or commandants in co-operation with the principal medical officer of the fortress. Should the resources of the fortress be incapable of supplying sufficient personnel and material, application must be made by him to his territorial delegate for further assistance and supplies.

(4) Reserve hospital delegates are appointed as required, to act within the sphere of the director of military reserve hospitals. Any personnel or material that is needed will be forwarded to them by the territorial delegates on requisition.

(5) Delegates for home lines of communication (*Liniendelegierter*). One voluntary aid delegate with the above designation is appointed to the commandant of each line. His duties are to facilitate business between the territorial delegates of the home army and the delegates of the lines of communication of the field army.

As regards voluntary aid in connection with troops in the field belonging to the Bavarian army, a delegate of the Bavarian Red Cross Committee is appointed to act in Berlin as a deputy military inspector of voluntary aid; and Bavarian delegates are also appointed to any army corps line of communication, clearing hospital directorate, sick and wounded transport detachment, and base, where Bavarian troops are operating in association with Prussian troops. Should a Prussian army corps be attached to the Bavarian army in the field, then the Prussian Red Cross Committee is similarly represented. In the home territory during war the voluntary aid delegates in

Bavaria are distributed in the same manner as noted above.

Voluntary Aid Personnel.

All individuals who take part in voluntary aid work with the German army, including the delegates, must be of German nationality, and belong to a class not liable to military service. An exception is made in the case of those who are liable to serve in the *Landsturm*, but should any such persons be attached for work with the voluntary aid associations a notification of the fact must be made to the military authority in whose district they live. A similar notification must be made should any such appointments be cancelled. Within these limits, the voluntary aid associations and Orders of Knighthood have full power to select their own personnel, but each individual must be fitted to fill, in every respect, the position for which he is selected, and an irreproachable character, reliability, good health, bodily activity, as well as good education, are noted in the regulations as indispensable. The special qualifications of each person on the list must be noted against his name, and those selected for service on the lines of communication must contract to serve for at least three months. In the case of doctors, approval of the War Office is required. The voluntary aid delegates are obliged to submit to the military authorities, to whom they are attached, a nominal roll of all personnel under them and to notify all alterations in the list monthly. The delegates on the lines of communication receive a copy of these lists and alterations from the delegates who are subordinate to them.

The whole of the personnel will wear a regulation uniform and be in possession of a regulation equipment for peace exercises as well as for war. The cost of

fitting them out with everything necessary in the way of clothing, &c., is borne by the voluntary aid associations. Male and female nurses may wear the uniform of an Order of Knighthood in the field, if entitled to do so. Commanders of voluntary aid transport columns, the assistant commanders and the medical officers of the columns, when employed in peace in the home territory, are entitled to attach to their uniforms their badges of rank. The personnel of voluntary aid must wear at all times the Red Cross brassard, and carry the identification card authorising the wearing of the brassard. Voluntary aid personnel is under the disciplinary control of the Deputy Commissioner and of the delegates, each in his own sphere, from the day its members are called out to serve until the time when their period of service with the army expires. The punishments which these voluntary aid officials may administer are : (1) A simple reprimand ; (2) a formal reprimand, with warning of discharge from the voluntary aid service if the offence be repeated ; (3) discharge from such service. A punishment book is kept, in which all punishments awarded will be noted. In addition to this disciplinary control, the whole of the voluntary aid personnel is subject to military law within the area of operations, and its members are to be expressly informed of this on being accepted for service. In the case of complaints, the regular army regulations will be followed regarding the manner in which complaints are to be made. The officers who are empowered to exercise direct command over the voluntary aid personnel are the Imperial Commissioner, the Deputy Commissioner, the voluntary aid delegates, the commanders of voluntary aid companies, the assistant commanders of companies, the commanders of sections, and all officers or medical officers of the regular army who exercise command over regular army

units to which the personnel of voluntary aid may be attached.

An important provision is introduced into the 1907 regulations warning voluntary aid associations against training their personnel in military exercises and duties which are required only on the field of battle, because they will not be employed where such exercises are necessary. For this reason, too, voluntary aid will not take part in military manœuvres, except under very special conditions and with the approval of the War Office.

Distribution of Voluntary Aid Personnel.

All voluntary aid personnel employed on the lines of communication or in the home territory is divided into the following classes: (1) Personnel for hospital duties (*Lazarettpflegepersonal*). (2) Personnel for taking care of sick and wounded during evacuation, called convoy personnel (*Begleitpersonal*). (3) Personnel for transport (*Transportpersonal*). (4) Personnel for duty in stores (*Depotpersonal*).

The male personnel is formed into companies (*Züge*) of 12 files each, i.e., 24 men. Each company is commanded by a company commander (*Zugführer*), who has under him an assistant commander. The company is further sub-divided into 2 sections of 6 files each, each under a section commander (*Sektionsführer*). These officers are nominated by their delegates on mobilization. The companies may be split up, and the command of the second half-company is then taken over by the assistant commander. Should a further division be necessary, the company commander will select one of the members of the company to take charge of the sub-divisions. In the formation of the companies of the convoy and transport personnel

a few skilled carpenters and blacksmiths are to be enrolled if possible. In case of necessity, drivers and conductors from the regular army may be added to assist individual companies. The material with which convoy and transport companies are to be equipped will be determined according to the nature of their employment by the principal medical officer of the lines of communication with the co-operation of the voluntary aid delegates.

Method of Employing Voluntary Aid Personnel on the Lines of Communication.

(a) *Hospital Duties.*—A voluntary aid hospital detachment (*Lazaretttrupp*) will be formed for each army corps. It will be attached to the clearing hospital detachment of the corps concerned, and will consist, as a rule, of 28 male nurses (of whom a portion must be trained as expert disinfectors and as clerks), 25 female nurses, and 4 male or female cooks. These will be distributed amongst the hospitals along the lines of communication. The voluntary aid delegate with the director of clearing hospitals will be their chief, but, in all matters connected with the exercise of their duties in hospital and with discipline, they will be subordinate to the medical officers of the hospitals in which they are serving. These officers have the right to appoint each individual to a definite duty, and are empowered, without reference to a higher authority, to remove from the hospital anyone who, in their judgment, is no longer suitable for employment, provided that his place can be filled immediately by a substitute. Individuals so discharged will report themselves to their delegate for further instructions. The senior medical officer of a hospital must enter in the record of service,

which is kept for each individual belonging to voluntary aid associations, a note of his conduct, the nature of the duties on which he was employed, the period during which he served under him, and his periods of inefficiency through sickness. Some special arrangements are made in the case of members of Orders of Knighthood who may be employed in military hospitals. These arrangements form one of the appendices to the regulations, and refer mainly to the supervision of the members of the Order by Knights of the Order and to other matters connected with special rules of the Order. There is no relaxation of the rule, however, which places them in subordination to the senior medical officer of the hospital to which they are attached.

(b) *Duties in Connection with Sick and Wounded during Evacuation.*—A voluntary aid detachment (*Begleittrupp*) of 112 male and 20 female nurses is formed for each line of communication inspectorate to assist the regular service in passing sick and wounded down the line to the reserve hospitals, and to establish and manage rest and dressing stations and collecting stations along the line. The detachment, or a portion of it, may be attached to the sick and wounded transport detachment at the request of the principal medical officer of the line of communication. Each detachment will be under the delegate for the line of communication concerned. Its members will carry out the orders of the medical officer in charge of a convoy in all matters connected with the care of the sick and wounded.

(c) *Duties in Connection with the Transport of the Sick and Wounded.*—A special transport section of voluntary aid personnel (*Transporttrupp*) will also be appointed to each line of communication, and will perform the duties of stretcher-bearers under the sick

and wounded transport detachment or such other duties as may be required by the advanced depôt of medical and surgical stores in connection with the fitting out of auxiliary ambulance trains, &c. It will consist of 112 men, and their duties are to undertake the conveyance of sick and wounded from the advanced hospitals to the headquarters of the line of communication, and from railway stations to hospitals and *vice versa* within the line of communication area. They are under the voluntary aid delegate on the line of communication.

(d) *Duties in Connection with Depôts.*—A depôt detachment of voluntary aid personnel (*Depottrupp*) consisting of 28 men is also formed in connection with each line of communication, to undertake the management of the voluntary aid depôt that will be established at the headquarters of the line. They will also be employed to assist the assistant delegates at the base and to establish subsidiary depôts at intermediate stations along the line, as required. Members of this detachment may be employed in piloting consignments of voluntary gifts by train from the base to the head of the line, and may be attached to the advanced depôt of medical and surgical stores as required by the principal medical officer of the line of communication.

The various voluntary aid detachments will assemble on mobilization at the localities that are most convenient for them, and will await further instructions there. The localities so selected must be determined in time of peace.

Method of Employing Voluntary Aid Personnel in the Home Territory.

In the home territory voluntary aid personnel is distributed, in the same way as on a line of com-

munication, for hospital duties, for care of sick and wounded during evacuation, for transport duties, and for duties in stores. The personnel employed in hospital duties will be distributed amongst the reserve and fortress hospitals of the regular military service. They will also take over the whole work of any voluntary aid hospitals that may be established in the home territory. The convoy personnel will take over the duties of attendance on sick and wounded during their conveyance by railway or water within the home territory, and will also be employed in dressing, rest and collecting stations along the line. The transport personnel will be employed in conveying sick and wounded within the home territory from railway stations to hospitals, and *vice versâ*. The dépôt personnel manages the voluntary aid stores at the base of home territory lines of communication, and may be employed in accompanying the larger consignments of stores from there to the field army line of communication bases. The strength and distribution of these various detachments in the home territory will be determined according to requirements, but the hospital personnel will be formed into detachments similar to the hospital detachments for each army corps in the field. They will be under the charge of the territorial delegate in whose district they may be employed.

Collecting and Forwarding of Gifts.

The regulations regarding the collecting and forwarding of voluntary gifts to an army in the field are somewhat extensive and detailed. The main principles are as follows: Voluntary aid dépôts for the reception of gifts, each with one delegate and the necessary dépôt personnel, will be formed at the headquarters station

of each army corps district in the home territory. There will be one such depôt at the military hospital of the station, and another at the refitting establishment. They will be designated "The Reception Station for Voluntary Gifts, No. 1 and No. 2" respectively, "for the 1st, 2nd, 3rd, &c., Army Corps,"* as the case may be, and they will be under the general commanding the army corps. The whole organization of these depôts must be arranged as far as possible in time of peace.

All gifts collected by the voluntary aid associations, or by individuals, are to be directed to these reception stations only, whether they are intended for the sick and wounded in hospital or for men in the field; and the invoices sent with the gifts must clearly state the nature of the contents, their destination, and the reception station to which they are sent. Each package must also be marked and labelled with the same particulars as on the invoice, on two sides at least. All packages must be of moderate weight and capable of being handled easily. The military regulations with regard to the preparation of packages for transport by sea will be adhered to, and the military transport regulations hold good as regards their transport by land. Once they have been received into the voluntary aid reception stations, as noted above, they are regarded as military stores and are carried free. The rule with regard to forwarding the goods to the front is that they shall be passed on in the order in which they are received, unless special instructions are given, to the bases of the lines of communications, where they will be received by the assistant voluntary aid delegates and the depôt detachments under them in depôts affiliated to the

* "Abnahmestelle freiwilliger Gaben Nr I (II) für das I (II, III, &c.) Armee korps."

medical section of the general military stores. Space will be set apart in the dépôt for this purpose by the military apothecary in charge of the section. The voluntary aid delegate has to carry out the instructions of the local railway station commandant, as well as of the military apothecary and hospital quartermaster in all technical matters. Trains proceeding with consignments of voluntary gifts will be brought up to the heads of the lines of communication under the direction of the principal medical officer of the field forces, with the co-operation of the director of the military railways. The regulations recommend that such trains be accompanied to their destination by selected members of the voluntary aid associations and by a military guard. The arrangements for storing, preparing inventories, forwarding, &c., of the goods are laid down in the regulations for the management of a base dépôt of military stores. When the packages arrive at the head of a line of communication they will be received in special dépôts established and managed by the voluntary aid representatives. They will be issued from these dépôts under detailed instructions from the authorities on the line, and any application from military officers in the field to have such goods sent to them should be made to the inspector of the line, who will inform his voluntary aid delegate. The principal medical officer of the line of communication has the right to determine the distribution of the gifts. A list of the gifts which it is desirable that the voluntary aid associations should prepare will be published from time to time by the Imperial Commissioner. It is specifically stated in the regulations that gifts for the sick and wounded or for the fighting force shall be exclusively articles that will relieve the military supply officers of the necessity of providing

anything except the bare necessities of life. Receipts will be given for all gifts received, and opportunities will be given to voluntary aid delegates to make themselves acquainted with the way in which they have been used.

Employment of Voluntary Aid in Connection with the Domestic Management of Reserve Hospitals.

The reserve hospitals are the military hospitals in the home territory, and, as already noted, one of the directions in which voluntary aid may supplement the regular service is by taking over the management of the domestic arrangements of these hospitals, as, for example, the dieting of the sick, hospital washing, &c. Such duties will be subordinate to the regular hospital administration in every respect, and should any expense be incurred by the voluntary aid authorities in connection with them, they will come to some agreement beforehand with the military administrative and medical authorities. In each case all the circumstances for which expenditure is required must be clearly explained. An imprest account may then be opened. No alteration will be made in the official regulations with regard to reserve hospitals in connection with the management of hospital dieting, laundry, &c., by voluntary aid; and the voluntary aid personnel will act in accordance with the rules laid down for the regular military personnel. They will keep, however, a special account of any expenditure for which the voluntary aid associations may afterwards claim reimbursement out of public funds.

The Establishment of Red Cross Societies' Hospitals (Vereinslazarette).

The Red Cross societies, Orders of Knighthood, and private individuals, may establish Red Cross hospitals

at their own expense for the purpose of taking over sick and wounded from the military reserve hospitals in the home territory. Such hospitals must be equipped as a rule for not less than 20 beds, and only sick and wounded from the reserve hospitals shall be admitted to them. They are to be placed under military discipline and control. Sanitary supervision will be exercised by the senior medical officer of the nearest military reserve hospital, or, in the case of larger garrisons, by the director of reserve hospitals. The principal medical officer of the army corps district exercises general supervision over all the hospital arrangements made by voluntary aid in his district. Discipline will be maintained among the patients by the senior medical officer or managing committee of the nearest military reserve hospital, or by a specially appointed committee, consisting of a military officer and a medical officer of the voluntary aid hospital. They will also be responsible for all official matters connected with the hospital. The general commanding the army corps district may hand over military buildings for the establishment of such hospitals on the proposal of the local commandant; but the whole equipment and personnel of the hospitals are to be provided by the Red Cross societies, Orders of Knighthood, or private individuals themselves. Certain articles of hospital equipment may, however, be handed over from the military stores. These are to be handed back when the hospital is demobilized. Should an application be made for a grant in aid of the expenses of the equipment and maintenance of Red Cross hospitals, including expenditure in connection with the treatment of sick and wounded, a full statement of the circumstances must be put forward and a strict account kept.

The Management of Red Cross Societies' Hospitals.

The general management of the Red Cross Societies' hospitals rests entirely with the societies and individuals concerned; and the co-operation of military or other officials only takes place, as already noted, in connection with discipline and where State interests are involved. The official regulations under this heading refer only to the conditions under which this co-operative control is exercised. The official side is represented by the military officer of the hospital committee, as referred to under the previous heading, and by a non-commissioned officer who is attached to the hospital for discipline, clerical purposes, and preparation of official returns under the supervision of this officer. All transactions, however, must be signed by both members of the committee. They are given a corresponding service stamp with the designation "Royal Hospital Committee of the Red Cross Society Hospital at —" (*"Königliche Lazarettkommission des Vereinslazaretts zu —"*).

Strict accounts have to be kept of receipts and expenditure, with the exception of expenditure on surgical material, food and hospital equipment, the management of which is entirely the concern of the society or individual. These accounts are to be kept in accordance with the regulations of the army medical service. A monthly return will be submitted to the chief intendant officer of the army corps district in which the hospital is situated. This return has to show the pay of the military member of the committee, the extra pay (9 shillings monthly) of the non-commissioned officer, payments to sick during their treatment in the hospital, payments to sick officers and officials, office expenses, funeral expenses, and money payments to the society, with receipts and sick reports attached.

With regard to the reception and disposal of sick and wounded admitted into or discharged from the hospital, the regulations of the regular army medical service are in force, with the following modifications: (1) The sick are to be accompanied by a transfer certificate from the military reserve hospital and will bring with them a complete outfit, including two shirts and a vest. Any other articles of clothing, or other property which may have been brought by the sick to the reserve hospital, will be kept there, and will not accompany the sick to the society's hospital. (2) On discharge from the society's hospital the patient will be sent to the military reserve hospital to which the society's hospital is attached. (3) In the case of death, a notification will be sent on the regular form to the reserve hospital concerned, with information regarding the place, time, cause of death, and hour of burial. Should there be no official reserve hospital in the immediate neighbourhood the information will be sent to the local government official direct, and through him to the reserve hospital with which the society's hospital is connected. Sick returns, together with the patient's bed-head sheets, and, when the hospital is demobilized, the admission and discharge book and the death register, will be sent from the societies' hospitals to reserve hospitals under instructions from the principal medical officer of the army corps district.

Private Nursing Homes.

Applications may be made for the reception of convalescents into private houses through the Central Committee of the Red Cross Societies or Orders of Knighthood, and also through government officials of the locality concerned. These applications will be sent to the voluntary aid territorial delegate and by him to the general officer commanding the army corps dis-

trict. They must be accompanied by a certificate from the above-named committees or government officials to the effect that the people concerned are thoroughly competent to undertake the care of any sick and wounded that may be sent to them. The approval of the general officer commanding the district is also required before any private nursing home may be established, and arrangements will also be made by him for placing the convalescents under the control of some definite military authority in his district, and of his principal medical officer, who may utilize the government medical services of the locality for the purpose. The territorial voluntary aid delegates also exercise supervision over the private nursing establishments, and the civil officials of the locality are required to co-operate when asked to do so by the military authorities. The owners of nursing homes are obliged to inform the military authorities from time to time whenever a convalescent has completely recovered, as well as to make known any requirements connected with the patients, and if necessary to submit medical certificates at their own expense. Should it be necessary to retain a convalescent in any of the homes for a longer period than that appointed, the owner of the home, if he is prepared to still retain the patient, must apply immediately to the supervising military authority, and the application must be accompanied by a medical certificate. The military authorities concerned must send a monthly return of the number of military patients in nursing homes under their supervision to the general officer commanding the army corps district.

Transmission of Information regarding Sick and Wounded, &c.

Members of voluntary aid associations who may be working in hospitals have assigned to them the duty

of endeavouring to induce the sick and wounded to write to their relatives regularly, and in the case of patients who are unable to do so, to undertake the correspondence themselves, so long as there is no medical objection. At the official central information bureau voluntary aid is represented by two members, who will undertake the distribution of information regarding the whereabouts of individuals of their own army, of the enemy's army, or of an allied army, and who may also co-operate in other work of the bureau.

Grants from Public Funds in Connection with Voluntary Aid.

A fixed sum is placed annually at the disposal of the Imperial Commissioner for the extra pay of his clerks, office disbursements, and travelling expenses when on inspection duty. During war the amount placed at his disposal will depend upon the proposals put forward by him or the Deputy Commissioner through the War Office. Free rations and quarters are provided for the Imperial Commissioner and voluntary aid delegates with the field army. Other members of voluntary aid personnel receive free rations and quarters both on the lines of communication and in the home territory. Persons, however, who are doing duty in their own neighbourhood and are living in their own homes will not receive these allowances except in case of need or under special circumstances. Members of voluntary aid associations may be granted daily pay for duties performed in government hospitals in the home territory, the amount being fixed by the War Office. Those employed on the lines of communication are entitled to regular pay in accordance with a special provision of the pay warrant. Free medical and surgical treatment, medicines, &c., in or out of hospital

are given to voluntary aid personnel on the lines of communication, but not to those employed in the home territory except under special circumstances. In the case of permanent injury or sickness due to service in the field they are entitled to certain gratuities, and in the case of death their families receive compensation from the State.

During peace the Imperial Commissioner and his assistants are entitled to have their letters franked, and the correspondence between territorial and army corps district delegates, and between them and the recognized voluntary aid associations, Orders of Knighthoods, or military authorities is also transmitted free, so long as it is concerned with preparations for mobilization. All such letters must bear the stamp or seal of the office from which they are despatched and be marked "military matter" (*Heeres-sache*). During war, the letters and telegrams of the Imperial Commissioner and the voluntary aid delegates are regarded as official, and the correspondence of the subordinate voluntary aid personnel is treated as soldier's letters under the regulations of the field postal service. Free passes are given to the voluntary aid personnel to travel by rail in second or third class cars during war. These passes are issued by the Imperial Commissioner and must indicate the nature and object of the journey. Free passages are also given in government transports when the journey is by sea. Packages labelled "voluntary gifts" and addressed to the voluntary aid reception stations are conveyed free by rail or on government transports. The Imperial Commissioner and voluntary aid delegates are supplied during a campaign with government horses, carriages, and grooms, or, when they use their own motor cars, with chauffeurs or allowances for chauffeurs, according to a fixed scale.

Method of Mobilizing Voluntary Aid.

The voluntary aid associations commence their war duties on reception of the order to mobilize. The Imperial Commissioner proceeds at once on a communication from the War Office to the headquarters of the commander-in-chief in the field, in order to undertake the direction of the voluntary aid service with the army.

The Deputy Commissioner takes over his office at Berlin. The documents appointing the voluntary aid delegates with the field army are prepared and issued.

The territorial delegates will get ready, as quickly as possible, lists showing the personnel and material that are ready for immediate use, together with a statement of the number of persons ready to proceed (1) for duty on the lines of communication ; (2) for general duty in the home territory, and (3) for duty only in the neighbourhood of their homes. The lists will be sent to the Imperial Commissioner. The territorial delegates will commence courses of instruction and exercises for the personnel already trained during peace, as well as for those offering their services for the first time. The order of mobilization will be as follows :—

- (a) By the tenth day of mobilization—the line of communication delegates, the delegates with the directors of clearing hospitals, the delegates with the sick and wounded transport detachments, assistant delegates and subordinate personnel, together with the personnel for hospital duties and the convoy personnel.
- (b) By the fifteenth day of mobilization—the personnel for transport and for duty in stores.

The voluntary aid delegates for the lines of communication and their assistants will proceed, on instructions issued by the War Office to the Imperial Commissioner or Deputy Commissioner, to the place

of assembly of the headquarters of the line of communication, and the assistant delegates, together with their subordinate personnel, to the base. Other voluntary aid personnel, including delegates with the clearing hospital directors and sick and wounded transport detachments, will await further instructions at the places arranged for the assembly of voluntary aid personnel.

The territorial delegates will be responsible for informing the military authorities of their district when any soldiers liable to serve in the home reserve are retained for employment in connection with voluntary aid, and also when they are released from such employment. The War Office will publish a notice calling upon all associations, societies or individuals willing to assist in the work of supplementing the Army Medical Service to apply to the Imperial Commissioner and to await instructions from him. A notice will also be published to the effect that the gifts intended for the hospitals or for the army in the field are to be addressed to the reception stations, which the Imperial Commissioner will appoint. Arrangements already planned and prepared in time of peace by the Red Cross Societies for equipping hospitals, &c., are to be completed as soon as the order for mobilization is received, provided they are such as are intended to be ready by the tenth day of mobilization. Arrangements that are planned to take more than ten days in mobilizing will not be commenced until a special order is issued.

As soon as possible after mobilization the provisions of the Geneva Convention of 6th July, 1906, are to be made known to all connected with voluntary aid, and it will be their duty to adhere to these provisions in the strictest manner.

Special provision is made for applying the regulations of 1907 to the employment of voluntary aid in the colonies and in colonial expeditions.

APPENDIX I.

PERSONNEL AND EQUIPMENT OF MEDICAL UNITS AND ADMINISTRATIVE SERVICES.

I.—EQUIPMENT OF MEDICAL OFFICERS.

All medical officers must be possessed of a surgeon's pocket case.

The sanitary officers are provided with a microscope and a bacteriological cabinet.

II.—EQUIPMENT OF DENTAL SURGEONS.

A dental cabinet is supplied for field service. It contains all necessary dental appliances.

III.—PERSONNEL AND EQUIPMENT OF COMBATANT UNITS.

These are shown in Appendix II. Every officer or man carries two first field dressings.

IV.—PERSONNEL AND EQUIPMENT OF FIELD MEDICAL ADMINISTRATIVE SERVICES.

(1) *Director-General of Medical Services in the Field.*—

- 1 surgeon-lieutenant-general.
- 2 surgeons-major.
- 1 surgeon-captain.
- 2 secretaries (field intendance department).
- 4 non-commissioned officers of the medical corps.
- 8 privates of the train.
- 10 riding and 2 draught horses.
- 1 two-horsed transport wagon.
- 1 surgeon's case of instruments.
- 1 medical and surgical box.

(2) *Principal Medical Officer of an Army.*—

- 1 surgeon-general.
- 1 surgeon-captain.
- 1 surgeon-lieutenant or 2nd lieutenant.
- 2 non-commissioned officers of the medical corps.
- 4 privates of the train.
- 4 riding and 2 draught horses.
- 1 two-horsed transport wagon.
- 1 surgeon's case of instruments.
- 1 medical and surgical box.

(3) *Principal Medical Officer of an Army Corps.*—

- 1 surgeon-colonel.
- 1 sanitary officer (surgeon-major or surgeon-captain).
- 1 surgeon-lieutenant or 2nd lieutenant.
- 1 corps apothecary.
- 2 non-commissioned officers of the medical corps.

- 5 privates of the train.
- 5 riding and 2 draught horses.
- 1 two-horsed transport wagon.
- 1 regimental instrument case.
- 1 medical and surgical box.
- 1 microscope.
- 1 bacteriological case.
- 1 large chemical analysis case.

(4) *Consulting Surgeon.*—

- 1 surgeon-colonel, surgeon-lieutenant-colonel, or surgeon-major.
- 1 surgeon-lieutenant or 2nd lieutenant.
- 1 non-commissioned officer of the medical corps.
- 3 privates of the train.
- 3 riding and 2 draught horses.
- 1 two-horsed transport wagon.
- 1 principal case of instruments.

(5) *Principal Medical Officer of an Infantry or Reserve Division.*—

- 1 surgeon-lieutenant-colonel.
- 1 surgeon-lieutenant or 2nd lieutenant.
- 1 non-commissioned officer of the medical corps.
- 2 privates of the train.
- 3 riding horses.

6) *Principal Medical Officer of a Cavalry Division.*—

- 1 surgeon-lieutenant-colonel.
- 1 non-commissioned officer of the medical corps (mounted).
- 4 privates of the train.
- 3 riding and 6 draught horses.
- 1 six-horsed medical equipment wagon.

V.—PERSONNEL AND EQUIPMENT OF FIELD MEDICAL UNITS.

(1) *Staff of the Army Medical Battalion.*—

- 1 battalion commander.
- 1 adjutant (lieutenant).
- 1 corporal (clerk).
- 5 lance-corporals (2 as cyclists and 3 as orderlies).
- 4 privates of the train.
- 9 riding and 2 draught horses.
- 1 two-horsed baggage wagon.

(2) *The Bearer Company and Reserve Bearer Company.*—

- 1 commandant.
- 2 lieutenants.
- 1 surgeon-lieutenant or 2nd lieutenant.
- 1 apothecary.
- 1 paymaster.
- 1 sergeant-major.
- 1 quartermaster-sergeant.
- 4 sergeants.
- 14 corporals.
- 16 lance-corporals { include 2 buglers, 1 tailor,
- 208 stretcher-bearers { 3 shoemakers, 1 wheelwright,
- 2 shoeing smiths.
- 1 lance-corporal, as cyclist.
- 2 medical sergeants-major or sergeants.
- 7 medical corporals (1 mounted as orderly for senior medical officer).
- 8 sick attendants.
- 1 sergeant of the train.
- 2 corporals of the train.
- 3 lance-corporals of the train.

28 privates of the train (8 as grooms for medical officers).

12 riding and 28 draught horses.

8 two-horsed ambulance wagons, each with 7 or 9 stretchers and surgical haversacks.

2 two-horsed medical wagons.

2 two-horsed stores wagons, each with an operation tent.

1 two-horsed supply wagon.

Attached to the Bearer Company, but not under its disciplinary command.—

1 surgeon-major as senior medical officer.

2 surgeons-captain.

5 surgeons-lieutenant or 2nd lieutenant.

9 riding horses.

(3) *Field Hospital and Reserve Field Hospital.—*

1 surgeon-major as senior medical officer.

1 surgeon-captain.

4 surgeons-lieutenant or 2nd lieutenant.

1 apothecary.

2 hospital quartermasters.

1 provost-sergeant.

1 corporal-clerk.

1 orderly room corporal.

1 lance-corporal as cyclist.

2 privates (1 as cook, 1 as compounder's assistant).

3 medical quartermaster-sergeants or sergeants as ward masters.

6 medical corporals.

14 sick attendants.

1 train sergeant.

1 train trumpeter.

1 train lance-corporal.

- 18 (19) train privates.
- 9 riding and 18 (20) draught horses.
- 1 two-horsed ambulance wagon with 7 or 9 stretchers and surgical haversacks.
- 2 two-horsed medical wagons.
- 1 two-horsed stores wagon.
- 4 two-horsed equipment wagons.
- 1 two-horsed wagon for officials.

Some field hospitals have no ambulance wagons and instead of 4 two-horsed have 3 four-horsed equipment wagons.

VI.—PERSONNEL AND EQUIPMENT OF LINE OF COMMUNICATION ADMINISTRATIVE MEDICAL SERVICES AND UNITS.

- (1) *Principal Medical Officer, Line of Communications* (one to each line of communication inspectorate).—
 - 1 surgeon-colonel as principal medical officer.
 - 1 surgeon-captain.
 - 1 corps apothecary.
 - 1 medical corporal.
 - 4 train privates.
 - 3 riding and 2 draught horses.
 - 1 two-horsed transport wagon.
 - 1 medical and surgical box.
 - 1 large chemical analysis case.
- (2) *Consulting Sanitary Officer*), one to each line of communication inspectorate).—
 - 1 surgeon-colonel, lieutenant-colonel, or major, as consulting sanitary officer.
 - 1 medical corporal.
 - 2 train privates.
 - 2 riding and 2 draught horses.

- 1 two-horsed transport wagon.
 - 2 microscopes in leather case.
 - 1 bacteriological case.
 - 1 portable bacteriological laboratory.
- (3) *Director of Clearing Hospitals*, (one for each army corps of a line of communication inspectorate).—
- 1 surgeon-lieutenant-colonel or major, as director.
 - 1 surgeon-lieutenant or 2nd lieutenant.
 - 1 medical corporal.
 - 2 train privates.
 - 3 riding horses.
- (4) *Clearing Hospital Detachment*, (one for each army corps of a line of communication inspectorate).—
- 4 surgeons-major.
 - 6 surgeons-captain.
 - 9 surgeons-lieutenant or 2nd lieutenant.
 - 1 dentist.
 - 3 apothecaries.
 - 6 hospital quartermasters.
 - 3 corporal-clerks.
 - 3 cooks.
 - 9 medical quartermaster-sergeants or sergeants, as wardmasters.
 - 18 medical corporals.
 - 36 sick attendants.
 - 26 train privates.
 - 1 dental case.
- (5) *Clearing Hospital*.—
- 1 surgeon-major or captain, as senior medical officer.
- Other medical officers, apothecaries and officials are taken from the clearing hospital detachment or from civil sources, as required. There is no fixed number.

Subordinate personnel is also obtained as required from the clearing hospital detachment or from the hospital section of the voluntary aid organization.

Equipment is obtained as required from local resources or from the advanced depôt of medical and surgical stores.

(6) *Line of Communication Hospital*.—

- 1 senior medical officer from the active, retired or reserve list of medical officers. (In the absence of such an officer the hospital is administered by a hospital committee of 1 combatant officer and 1 civil surgeon.)

Medical officers are obtained from civil sources, subordinate personnel from the voluntary aid organizations or civil sources, and equipment from local sources.

(7) *Sick and Wounded Transport Detachment*, (one for each line of communication, inspectorate, forming rest stations, dressing stations, and collecting and distributing stations).—

- 1 surgeon-major, as senior medical officer.
- 2 surgeons-captain.
- 4 surgeons-lieutenant or 2nd lieutenant.
- 1 hospital quartermaster.
- 1 provost-sergeant.
- 2 medical sergeants.
- 4 medical corporals.
- 8 sick attendants.
- 8 train privates.

Equipment is obtained from local sources or from the advanced depôt of medical and surgical stores.

(8) *Ambulance Train.*—

- 1 surgeon-major, as senior medical officer.
- 3 surgeons-lieutenant or 2nd lieutenant.
- 1 hospital quartermaster.
- 1 mechanic (lance-corporal).
- 4 privates (cooks and assistant cooks).
- 5 medical sergeants.
- 11 medical corporals.
- 16 sick attendants.
- 5 train privates of the railway section
- 24 ambulance cars with 12 beds each.
- 1 officers' ambulance car with 8 beds.
- 1 car for the senior medical officer.
- 1 car for the medical officers.
- 2 cars for the medical personnel.
- 1 car for office and dispensary.
- 2 kitchen cars.
- 3 cars with boilers, &c.
- 2 cars for equipment.
- 1 car for stores.
- 1 car for baggage.

Auxiliary ambulance trains, hospital ships, &c., have no fixed establishment but have a medical officer in command. Ordinary hospital trains are under the charge of a combatant officer with two military police.

(9) *Advanced Depot of Medical and Surgical Stores*, (one for each line of communication inspectorate).—

- 1 commandant (lieutenant).
- 1 lieutenant.
- 1 senior apothecary.
- 5 apothecaries.
- 3 hospital quartermasters.
- 4 corporal clerks.

8 corporals as foremen.		
6 instrument makers (subordinate officials).		
1 sergeant-conductor... ..	} Forming the transport column.	
1 train corporal		
32 train privates		
2 riding and 48 draught horses		
24 two-horsed transport wagons		
1 mounted medical sergeant as conductor	} For each Roentgen-ray wagon.	
1 medical lance-corporal		
1 mechanic		
2 train privates		
1 riding and 4 draught horses		
1 mechanic... ..	} For each wheeled water sterilizer.	
1 train private		
2 draught horses		
1 four-horsed Roentgen-ray wagon	} For each army corps of the line of communication inspectorate.	
1 two-horsed wheeled water sterilizer		

(10) *Base Dépôt of Medical Stores.*—

- 1 senior apothecary.
- 2 hospital quartermasters.
- 4 medical sergeants.
- 10 corporals.
- 3 train privates.

VII.—PERSONNEL AND EQUIPMENT OF HOME TERRITORY MEDICAL UNITS.

(1) *Central Information Bureau.*—

- 1 regimental commander.
- 1 field officer.
- 2 captains.

- 1 surgeon-major or surgeon-captain.
- 2 surgeons-captain.
- 1 senior accountant.
- 1 captain as adjutant to the commander.
- 37 secretaries.
- 5 registrars.
- 133 corporal clerks.
- 2 medical corporal clerks.
- 5 officers' servants.
- 2 members of voluntary aid societies.

The offices of the principal medical officers of reserve army corps and the reserve hospitals have the same personnel and equipment as in peace.

APPENDIX II.

MEDICAL PERSONNEL AND EQUIPMENT OF REGIMENTAL UNITS.

Unit.	Regiment, Battalion or Artillery Brigade Medical Officer.	Surgeon-Lieutenant or Surgeon 2nd Lieut.	Rank and File of Medical Corps.	Stretcher-bearers.	Auxiliary Stretcher-bearers.	Mounted Guide, each with one Pack Horse.†	Woollen Belts.‡	Blankets for Sick.	Water Bottles.	Pouch of Instruments for Dressings.	Surgical Pouches (pair) for Dismounted Men of Medical Corps.	Surgical Pouches for Mounted Men of Medical Corps.	Instrument Case for Infantry.	Instrument Case for Cavalry.	Surgical Knapsack.	Pair Surgical Panniers for Cavalry.	Medical and Surgical Boxes for Infantry.	Emergency Stretcher.	Field Stretcher and Slings.	Stretcher and Slings for Wagons.	Set of Tent Poles for Shelter Tent.	2-Horsed Infantry Medical Wagon.	2-Horsed Cavalry Medical Wagon.	6-Horsed Medical and Surgical Equipment Wagon.
	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.	XIV.	XV.	XVI.	XVII.	XVIII.	XIX.	XX.	XXI.	XXII.	XXIII.	XXIV.
1. Cavalry and Infantry Staff Guard of Imperial Headquarters	1	1	1	—	—	—	40	20	1	1	1	—	—	1	—	1	1	2	—	2	—	—	1	—
2. Infantry and Rifle Battalion	1	1	4	16	—	—	80	52	20	4	20	—	1	—	—	—	—	—	4 or 5	—	—	1	—	—
3. Infantry machine gun company	—	—	1	—	—	—	10	8	1	1	1	—	—	—	—	—	—	—	1	—	—	—	—	—
4. Machine gun battery	—	—	1	—	—	—	10-15	8	1	1	—	1	—	—	—	—	—	—	1	—	—	—	—	—
5. Regiment of Divisional Cavalry of { 4 squadrons	—	—	4	—	—	2	80	28	6	4	—	6	—	—	—	2	—	4	—	—	—	—	—	—
{ 5 "	—	—	5	—	—	3	100	35	7	5	—	7	—	—	—	2	—	4	—	—	—	—	—	—
{ 6 "	1	2	6	—	—	4	120	42	10	6	—	10	1	—	—	4	—	8	—	—	—	—	—	—
6. Regiment of Cavalry Division of 4 squadrons	1	2	6	—	—	2	80	28	6	6	—	8	—	1	—	2	—	4	—	2	—	—	1	—
7. Cavalry Division, 2nd line transport	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12	—	—	—	—	—	—
8. Pioneer detachment, Cavalry Division	—	—	—	—	—	—	5	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9. Staff of Field Artillery Brigade	1	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
10. Field or Field Howitzer battery	—	—	1	—	—	—	20	8	1	1	1	—	—	—	1	—	1	—	1	—	—	—	—	—
11. Battery of Horse Artillery	—	—	1	—	—	—	20	8	1	1	—	1	—	—	1	—	1	—	1	—	—	—	—	—
12. Light Ammunition Column or Light Field Howitzer Ammunition Column	—	—	1	—	—	—	20	8	1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—
13. Light Ammunition Column of Cavalry Division	—	—	1	—	—	—	10	7	1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—
14. Ammunition Column Staff	1	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
15. Infantry, Artillery or Field Howitzer Ammunition Column	1	1 or 2	—	—	—	—	20	8	1	1	1	—	—	—	—	—	1	—	—	—	—	—	—	—
16. Staff of Foot Artillery Battalion	1	1 or 2	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
17. Company of Foot Artillery or Park	—	—	1	—	—	—	20	10	1	1	1	—	—	—	1	—	1	—	1	—	—	—	—	—
18. Heavy Howitzer Battery	—	—	1	—	—	—	30	18	1	1	1	—	—	—	1	—	1	—	1	—	—	—	—	—
19. Mortar Battery	—	—	1	—	—	—	25	12	1	1	1	—	—	—	1	—	1	—	1	—	—	—	—	—
20. Staff of Foot Artillery Ammunition Column	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
21. Foot Artillery Ammunition Column	—	—	1	—	—	—	10	8	1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—
22. Field Pioneer Company	—	1	1	—	—	—	20 or 25	10 or 12	1	1	1	—	—	—	1	—	1	—	1	—	—	—	—	—
23. Divisional Bridge Train	—	—	—	—	—	—	10	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
24. Army Corps Bridge Train	—	1	—	—	—	—	20	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
25. Pioneer escort of Corps Bridge Train	—	—	1	—	—	—	20	5	1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—
26. Army or Corps Telegraph detachment	—	1	1	—	—	—	20 or 25	5 or 8	1	1	1	—	—	—	—	—	1	—	—	—	—	—	—	—
27. Wireless Telegraph detachment	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
28. Field Signalling detachment	—	—	1	—	—	—	—	—	1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—
29. Field Airship detachment	—	1	1	—	—	—	20	8	1	1	1	—	—	—	1	—	1	—	2	—	—	—	—	—
30. Gas Column of Airship section	—	—	1	—	—	—	5	8	1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—
31. Commander of the Train for L. of C. Train	1	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
32. Staff of Supply Train Battalion	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
33. Supply Column or L. of C. Supply Column	—	—	—	—	—	—	10	4 or 6	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
34. Supply Park or L. of C. Supply Park	—	—	—	—	—	—	20	6	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
35. Remount or L. of C. Remount Depot	—	—	—	—	—	—	10	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
36. Field or L. of C. Bakery Column	—	—	—	—	—	—	20	8 or 10	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
37. L. of C. Ammunition Column	—	—	1	—	—	—	20	8	—	1	1	—	—	—	—	—	1	—	—	—	—	—	—	—
38. L. of C. Command	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
39. Military Director of Railways	1	—	1	—	—	—	—	—	1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—
40. Railway Construction Company	—	1	1	—	—	—	25	12	1	1	1	—	—	—	1	—	1	—	—	—	—	—	—	—
41. Lines of Communication Command in Home Territory	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* As required.

† The guide changes from saddle to pack horse from time to time.

‡ In winter campaigns the number is doubled.

The rank and file of Medical Corps, the stretcher bearers and guide carry each one pair of surgical pouches (Columns XI and XII), and one water bottle (Column IX). The rank and file of Medical Corps carry in addition one pouch of instruments for dressings (Column X).

APPENDIX III.

VOCABULARY OF TERMS USED IN CONNECTION WITH
THE GERMAN ARMY MEDICAL SERVICE IN THE
FIELD.

(The vocabulary is arranged as far as possible according to échelon of units in the field instead of alphabetically.)

PERSONNEL.

German Terms.	English Equivalents.
<i>Generalstabsarzt.*</i>	Director-General, Army Medical Service.
<i>Chef des Feldsanitätswesens.</i>	Director of Medical Services in the field.
<i>Armeearzt.</i>	Director of Medical Services of a field army.
<i>Korpsarzt.</i>	Director of Medical Services of an army corps.
<i>Divisionsarzt.</i>	Administrative Medical Officer of a division.
<i>Etappenarzt.</i>	Deputy Director of Medical Services, L. of C.
<i>Stellvertretender Korpsarzt.</i>	Principal Medical Officer of an army corps district in the Home Territory.
<i>Beratender Chirurg.</i>	Consulting Surgeon.
„ <i>Hygieniker.</i>	„ Sanitary Officer.
<i>Kriegslazaretttdirektor.</i>	Deputy Assistant Director of Medical Services (L. of C.).
<i>Reservelazaretttdirektor.</i>	Administrative Medical Officer in Home Territory.
<i>Fachärztlicher Beirat.</i>	Consulting Specialist in Home Territory.

* See page 40 for various grades of medical officer.

PERSONNEL—*contd.*

German Terms.	English Equivalents.
<i>Chefarzt or Leitenderarzt.</i>	Senior Medical Officer of a medical unit.
<i>Regimentsarzt.</i>	Senior Medical Officer of a regiment.
<i>Bataillonsarzt.</i>	Medical Officer with a battalion.
<i>Abteilungsarzt.</i>	" with an artillery brigade.
<i>Truppenarzt.</i>	Medical Officer doing duty with troops (general term).
<i>Zahnarzt.</i>	Dental Surgeon.
<i>Hilfsarzt.</i>	Local Civil Practitioner employed by the army.
<i>Vertragsmässig angenommener Zivilarzt.</i>	Contract Civil Surgeon.
<i>Kaiserlicher Kommissar und Militär-Inspekteur der freiwilligen Krankenpflege.</i>	Imperial Commissioner and Military Inspector of Voluntary Aid.
<i>Stellvertretender Militär-Inspekteur.</i>	Deputy Inspector of Voluntary Aid.
<i>Generaldelegierter.</i>	Voluntary Aid Delegate-General.
<i>Territorialdelegierter.</i>	" " delegate in a civil district.
<i>Korpsbezirksdelegierter.</i>	Voluntary aid delegate of an army corps district.
<i>Etappendelegierter.</i>	Voluntary aid delegate on a line of communication.
<i>Delegierter bei der Kriegslazarett-direktor.</i>	Voluntary aid delegate with a Deputy Assistant Director A.M.S. (L. of C.).
<i>Delegierter bei der Krankentransportabteilung.</i>	Voluntary aid delegate for evacuation (L. of C.).
<i>Delegierter bei der Reservelazarett-direktor.</i>	Voluntary aid delegate with an A.M.O. (Home Territory).
<i>Reservelazarettdelegierter.</i>	Voluntary aid delegate with a general hospital (Home Territory).
<i>Liniendelegierter.</i>	Voluntary aid delegate on a L. of C. (Home Territory).
<i>Festungsdelegierter.</i>	Voluntary aid delegate in a fortress.
<i>Unterdelegierter.</i>	Assistant delegate of voluntary aid.
<i>Krankenträger.</i>	Stretcher-bearer.
<i>Hilfskrankenträger.</i>	Auxiliary stretcher-bearer.
<i>Militärkrankenwärter.</i>	Male sick attendants.
<i>Krankenpfleger.</i>	Civil male nurse.
<i>Krankenpflegerin.</i>	Female nurse.
<i>Armeeschwester.</i>	Army nursing sister.
<i>Oberschwester.</i>	Matron.
<i>Stationsaufseher.</i>	Wardmaster.

PERSONNEL—*contd.*

German Terms.	English Equivalents.
<i>Sanitäts-mannschaft.*</i>	Warrant Officers, N.C.O.'s, and men of the medical corps, with ranks as in combatant units, but with <i>Sanitäts-</i> prefixed.
<i>Lazarettbeamter.</i>	Officials without officers' grade employed with medical units.
<i>Lazarettunterbeamter.</i>	Subordinate officials employed with medical units.
<i>Feldlazarettinspektor.</i> <i>Lazarettkommission.</i>	Quartermaster with medical units. Committee of management of a hospital where there is no regular army medical officer in charge.

MEDICAL UNITS, &C.

German Terms.	English Equivalents.
<i>Sanitäts-formation.</i> <i>Sanitätsanstalt.</i>	Medical unit. Army medical establishment. The former term is used for mobile, the latter for fixed, units.
<i>Truppsanitätsdienst.</i>	Medical service with regimental units
<i>Truppenverbandplatz.</i>	Regimental dressing station.
<i>Sanitätsstaffel.</i>	Dressing station of a cavalry division.
<i>Hauptverbandplatz.</i>	Dressing station of a bearer company.
<i>Leichtverwundetensammelplatz.</i>	Collecting station for slightly wounded.
<i>Empfangsabteilung.</i>	Reception section of a dressing station.
<i>Leichtkrankenabteilung.</i>	Slightly wounded section of a dressing station.
<i>Schwerkrankenabteilung.</i>	Severely wounded section of a dressing station.
<i>Sanitätsbataillon.</i>	Medical battalion of an army corps.
<i>Sanitätskompagnie.</i>	Bearer company of a medical battalion.
<i>Feldlazarett.</i>	Field hospital of a medical battalion.

* See page 48 for various grades of subordinate ranks of the medical corps.

MEDICAL UNITS, &C.—*contd.*

German Terms.	English Equivalents.
<i>Kriegslazarett.</i>	Clearing hospital.
<i>Kriegslazarettabteilung.</i>	" detachment or personnel.
<i>Etappenlazarett.</i>	Line of communication or station-ary hospital.
<i>Geisteskrankenabteilung.</i>	Mental diseases section of L. of C. hospital.
<i>Genesungsabteilung.</i>	Convalescent section of L. of C. hospital.
<i>Seuchenlazarett.</i>	Infectious diseases hospital.
<i>Festungslazarett.</i>	Fortress hospital.
<i>Reserve-Sanitätskompagnie.</i>	Bearer company of reservist division.
<i>Reserve-Feldlazarett.</i>	Field hospital of reservist division.
<i>Reservelazarett.</i>	General hospital in the Home Territory.
<i>Freiwillige Krankenpflege.</i>	Voluntary aid.
<i>Vereinslazarett.</i>	" (Red Cross Society's) hospital.
<i>Lazarettrupp.</i>	Hospital detachment of voluntary aid.
<i>Privatpflegestätte.</i>	Private nursing homes.
<i>Verpflegungsstation.</i>	Refreshment station on line of railway.
<i>Uebernachtungsstation.</i>	Halting station for patients remaining over night during transit by passenger trains.
<i>Verband- und Erfrischungstation.</i>	Rest and bandaging station on line of railway.
<i>Krankentransportabteilung.</i>	Sick and wounded transport detachment.
<i>Begleittrupp.</i>	Convoy detachment of voluntary aid.
<i>Transporttrupp.</i>	Transport detachment of voluntary aid.
<i>Krankensammelpunkt.</i>	Post to which sick are collected on the march.
<i>Krankensammelstelle.</i>	Post at railhead to which sick and wounded are collected previous to evacuation by railway.
<i>Ausladeplatz</i>	Section of dressing station where wounded are unloaded.
<i>Einladepunkt.</i>	Post where sick and wounded are embarked for water transport.
<i>Lazarettzug.</i>	Ambulance train.
<i>Hilfslazarettzug.</i>	Improvised or auxiliary ambulance train.

MEDICAL UNITS &C.—*contd.*

German Terms.	English Equivalents.
<i>Krankenzug.</i>	Passenger train carrying sick and wounded.
<i>Lazarettsschiff.</i>	Hospital ship.
<i>Hilfslazarettsschiff.</i>	Improvised or auxiliary hospital ship.
<i>Krankenschiff.</i>	Transport carrying sick and wounded.
<i>Lazarettsschiffszug.</i>	Train of hospital boats (barges, river steamers, &c.).
<i>Hilfslazarettsschiffszug.</i>	Train of improvised hospital boats.
<i>Krankenschiffszug.</i>	„ boats carrying sick and wounded.
<i>Etappensanitätsdepot.</i>	Advanced depôt of medical and surgical stores.
<i>Sanitätsabteilung des Güterdepots.</i>	Base depôt of medical and surgical stores.
<i>Sanitätsdepot.</i>	Medical and surgical supply depôt in home territory.
<i>Hauptsanitätsdepot.</i>	Central medical and surgical supply depôt in Berlin.
<i>Arznei- und Verbandmittel Anstalt</i>	Section of garrison hospitals for preparing medicines and dressing material.
<i>Abnahmestelle freiwilliger Gaben.</i>	Voluntary aid depôt for reception of gifts.
<i>Depottrupp.</i>	Voluntary detachment for duty at voluntary aid depôts.
<i>Zentralnachweisebureau.</i>	Central information bureau in Berlin.

MEDICAL AND SURGICAL MATERIAL, &C.

German Terms.	English Equivalents.
<i>Genfer Armbinde.</i>	Red Cross brassard.
<i>Roterbinde.</i>	„ brassard of auxiliary stretcher-bearer.
<i>Rotelaterne.</i>	Red lantern for medical units at night.
<i>Genferflagge.</i>	Red Cross flag.
<i>Landesflagge.</i>	National flag.
<i>Neutralitätszeichen.</i>	Badge of neutrality.
<i>Genfer Abkommen.</i>	Geneva Convention.
<i>Erkennungsmarke.</i>	Identification tally.
<i>Wundtäfelchen.</i>	Diagnosis tally.

MEDICAL AND SURGICAL MATERIAL, &C.—*contd.*

German Terms.	English Equivalents.
<i>Signalvorrichtung.</i>	Indicators of medical units (<i>i.e.</i> , Red Cross and National flag and red lantern).
<i>Verbandmittel or Verbandstoff.</i>	Dressing material.
<i>Keimfreie Verbandmittel.</i>	Sterilized dressing material.
<i>Roter Verbandstoff.</i>	Sublimate (red) dressing material.
<i>Verbandpäckchen.</i>	First field dressing.
<i>Sanitäts-Verbandzeug.</i>	Pouch with instruments, &c., for dressing wounds.
<i>Verbandmitteltasche.</i>	Pouch with dressings attached to stretchers (surgical haversack).
<i>Sanitätstornister.</i>	Surgical knapsack. (Field medical companion.)
<i>Sanitätstasche.</i>	Medical and surgical pouches.
<i>Sanitätspacktasche.</i>	" " panniers for cavalry.
<i>Hauptbesteck.</i>	Principal case of instruments.
<i>Kavalleriebesteck.</i>	Cavalry case of instruments.
<i>Taschenbesteck.</i>	Medical officer's pocket case of instruments.
<i>Truppenbesteck.</i>	Regimental case of instruments.
<i>Sanitätskasten.</i>	Medical and surgical boxes for infantry.
<i>Reagentienkasten.</i>	Chemical analysis case.
<i>Zahnärztliches kasten.</i>	Dental case.
<i>Bacteriologisches kasten.</i>	Bacteriological case.
<i>Tragbares bacteriologisches Laboratorium.</i>	Portable bacteriological laboratory.
<i>Sanitätsausrüstung.</i>	Medical and surgical equipment (general term).
<i>Sanitätshilfsmittel.</i>	Improvised medical and surgical equipment, or equipment from local resources.
<i>Feldröntgenwagen.</i>	Field Roentgen-ray wagon.
<i>Feldsteriliziergerät.</i>	" sterilizing apparatus.
<i>Fahrbarer Trinkwasserbereiter.</i>	Wheeled water sterilizer.
<i>Verbindezelt.</i>	Operation tent, improvised out of <i>tentes abris</i> .
<i>Verwundetenzelt.</i>	Regimental dressing-station tent, improvised out of <i>tentes abris</i> .
<i>Krankenzelt.</i>	Ward tent.
<i>Lazarettbaracke.</i>	Hospital huts.
<i>Zerlegbare Lazarettbaracke.</i>	Portable hospital huts.

NOTE.—The diagnosis tally indicates whether a man is *Marschfähiger* (able to walk), *Transportfähiger* (suitable for transport), *Nicht-transportfähiger* (unfit for transport).

TRANSPORT MATERIAL.

German Terms.	English Equivalents.
<i>Verwaltungs- und Apothekenwagen.</i>	Car of ambulance train for dispensary, office, &c.
<i>Arztwagen.</i>	Car of ambulance train for medical officers.
<i>Chefarztwagen.</i>	Car of ambulance train for senior medical officer.
<i>Gepäckwagen, Magazinwagen, Vorrathswagen, Küchenwagen, Heizkesselwagen, rankenwagen.</i>	Cars of ambulance train for baggage, stores, equipment, kitchen and boilers.
<i>Offizierkrankenwagen.</i>	Ambulance wagon, or ward car of ambulance train.
<i>Krankentrage.</i>	Officers' ward car on ambulance train.
<i>Nottrage.</i>	Stretcher.
<i>Behelfstrage.</i>	Emergency stretcher of cavalry.
<i>Tragegurt.</i>	Improvised stretcher.
<i>Sanitätspackpferd.</i>	Stretcher sling.
<i>Sanitätswagen.*</i>	Medical pack animal of cavalry.
<i>Sanitätsvorratswagen.</i>	Medical wagon of units, specially fitted with compartments, &c., for medical and surgical stores.
<i>Beamtenwagen.</i>	Medical stores wagon of cavalry division.
<i>Fahrzeug.</i>	Wagon for apothecary and quartermaster of field hospitals.
<i>Stabspackwagen.</i>	General term for transport or general service wagon.
<i>Packwagen.</i>	Baggage or stores wagon for staff
<i>Lebensmittelwagen.</i>	Baggage or stores wagon.
<i>Gerätewagen.</i>	Supply wagon.
	Equipment wagon.

* *Truppensanitätswagen, Infanteriesanitätswagen, Kavalleriesanitätswagen*, signify regimental, infantry and cavalry medical wagons, and these, as well as the *Sanitätswagen* of bearer companies and field hospitals, differ from one another in construction and fittings.

APPENDIX IV.

CONVALESCENT HOMES OF THE GERMAN ARMY.

1. The *Wilhelms-Heilanstalt* in Wiesbaden, the foundation stone of which was laid by Wilhelm I in 1868. It was established for wounded and sick officers and men of the army and for invalids after the wars of 1864 and 1866, but was used as a base hospital during the Franco-German war, and only opened as a convalescent home in 1871. It is under the charge of the senior medical officer of the Wiesbaden garrison, and is specially fitted out for hydropathic and medico-mechanical treatment.
2. The *Militärkurhaus* at Landeck, established after the Danish campaign of 1864. The foundation stone was laid in 1865 in commemoration of the 100th anniversary of Frederick the Great's visit to Landeck. It contains buildings for officers and men, and is under the command of the General Officer commanding the 6th Army Corps. The senior medical officer is a *General-oberarzt*, the appointment being held independently of other duties. From April to the end of September a junior medical officer and other medical personnel are attached to the establishment. It is also specially fitted up for hydropathic and medico-mechanical treatment.

3. The *Militär-bade Institut* in Teplitz, founded by Friedrich Wilhelm III in 1825. In 1870 additions were made to the building, and again in 1889 and 1899. It has accommodation for 3 officers and 56 men, and is connected with the garrison hospital at Halle.
4. The *Genesungsheim und Militärkurhaus* in Driburg in Westphalia. It was originally a private sanatorium, dating from 1871, and was bought in 1901 by the Government. It has accommodation for 60 patients in 28 rooms, and is in a forest and hill country with sulphur and other baths. It belongs to the 7th Army Corps.
5. *Militärkurhaus* in Bad Nauheim, established in 1903, with room for 4 officers and 39 men, who have free access to the Nauheim baths from 1st April to the end of October. They are treated by a civil medical man, who receives 15s. for each patient for the whole course of treatment.
6. *Militärkurhaus und Genesungsheim* in Norderney, in the 10th Army Corps, consists of a house in Benekestrasse with 21 beds, rented by the military authorities since 1896 at £100 yearly rent, a similar house in the same street rented since 1899 with 9 beds and a room with 4 beds placed at the disposal of military authorities for many years in the annexe of the Royal Baths.
7. Convalescent Home of the Guards' Army Corps in Biesenthal. This convalescent home was built by the town authorities in 1900-03 at a cost of £15,000 and leased to the Government for 30 years as a convalescent home

- for men of the Guards' Army Corps. It has accommodation for 93 patients in 25 rooms.
8. Convalescent Home of the 4th Army Corps in Suderode. This house was built as a vicarage in 1892 and has been rented by the military authorities since 1901. It accommodates 27 convalescents.
 9. Convalescent home of the 14th Army Corps in Sulzburg. It is rented from the town by the military authorities on a 25 years' lease. It accommodates 68 convalescents, and is beautifully situated amongst wooded mountains.
 10. Convalescent home of the 15th Army Corps in Rothau. It was originally a private property known as the Villa d'Albay and was bought by the military authorities in 1900 and reconstructed for 66 convalescents.
 11. Convalescent home for the 16th Army Corps in Lettenbach. The castle of Lettenbach was equipped as a convalescent home for soldiers in 1894-95, and can take 93 convalescents. It consists of the old and new castle and administration buildings, all situated in an extensive park.
 12. Convalescent home for the 17th Army Corps in Hochwasser. The building is the old Villa Hochwasser, that was used as a private house till 1905, being built in 1850 in the style of the Italian renaissance. It has accommodation for 40 convalescents, and has magnificent grounds.
 13. The *Villa Hildebrand* in Arco, South Tyrol, for German combatant and medical officers. Herr Wilhelm Hildebrand presented this villa in 1901 to the Kaiser, who accepted it

as a tuberculosis sanatorium for combatant and medical officers.

14. The *Offizierheim Taunus*. In 1907 the Kaiser purchased the tuberculosis sanatorium, *Falkenstein*, in the Taunus mountains, as a sanatorium for officers. The original building is to be pulled down and a new building constructed in its place. It is not intended for tubercular patients.
15. The convalescent homes for the Saxon army are at Glasewalds-Ruhe (12th Army Corps), and Grünbach (19th Army Corps).
16. The Bavarian Army convalescent home is at Benediktbeuern.

There are also several convalescent homes for families of soldiers, generally maintained by voluntary subscriptions, such as the *Schloss Idstein* in the Taunus and homes near Swinemunde on the Baltic.



